

LAW AND CONTEMPORARY PROBLEMS

WATER RESOURCES

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SCHOOL OF LAW • DUKE UNIVERSITY

VOL. XXII

SUMMER, 1957

No. 3

LAW AND CONTEMPORARY PROBLEMS

A QUARTERLY PUBLISHED BY THE DUKE UNIVERSITY SCHOOL OF LAW
DURHAM, NORTH CAROLINA

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VOLUME 22

SUMMER, 1957

NUMBER 3

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PUBLISHED QUARTERLY

WINTER, SPRING, SUMMER, AUTUMN

Subscriptions: U. S. & Possessions \$5.00; Foreign \$5.50. Single copies \$2.00

(A supply of copies of all issues is provided to fill orders for single numbers)

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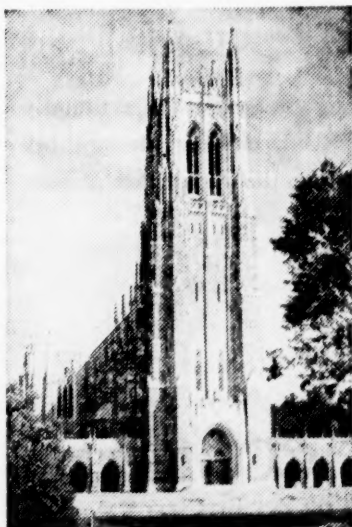
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VOLUME 22

SUMMER, 1957

NUMBER 3

FOREWORD

Optimal utilization of our vitally important water resources poses a national challenge that has defied the mechanical application of stereotyped formulae. The problems that demand resolution, on both organizational and policy-making levels, would sorely tax ingenuity under even the most propitious circumstances, for they are functions of multitudinous, constantly-changing variables whose values in many instances are extremely difficult, if not impossible, to assess. The matter is further complicated by the obtrusion of extraneous factors that operate effectively to foreclose consideration and exploration of many possibly promising avenues of inquiry.

Some of our most besetting difficulties inhere in the philosophy and machinery of our federal system of government. Diffusion and confusion of authority and other sovereign attributes between and among governmental units and their instrumentalities has not only obscured appropriate objectives, but has conducted internecine jealousy, evasion of responsibility, and shameful waste of a priceless natural asset. This is not to say, of course, that the existing patterns of intergovernmental relationships are wholly incompatible with the prudent husbanding and use of our water resources. It does, however, suggest that a high order of legislative and administrative skill, firmly bolstered by informed public opinion, is necessary to formulate and implement a rational program.

Certain broad concepts, lately emerged, have, in fact, gained general recognition and acceptance and have afforded the necessary foci for comprehensive water resources planning, development, and operation. The most significant of these has been the integrated drainage-basin approach. As translated into action in the Tennessee River Valley, it has fired the imagination of the world. The transferability of this total experience to other locales is at least questionable, however, in light of the peculiar milieu in which the Authority was conceived, born, and nurtured. Still, in modified form, and with varying degrees of success, this experiment has quite extensively been repeated, and has constituted and will doubtless continue to constitute a standard for emulation and comparison.

Perhaps less well-known and understood is the rather recently inaugurated United States Department of Agriculture-sponsored small watershed program. Although somewhat limited in scope and lacking a national or even truly regional or basin-wide

orientation, it does have the virtue of continuity. It may, moreover, conceivably be so administered as to effect water resources management on a scale much grander than that envisaged by its framers. Experience, however, has been too brief and inconclusive to date to permit firm evaluation of the program or intelligent speculation as to its likely future course.

Probably the most highly emotive issue affecting water resources concerns the role that is to be played by private enterprise in its exploitation. A "partnership" policy of the sort currently heralded would introduce no novel principle and would perhaps seem to be justifiable on historical grounds. But to what extent—if at all—would it comport with the public interest as this has now come to be conceived? Crucial and far-reaching decisions must ultimately be made in this area. Is it fatuous to hope that the process may be governed by objective factual analysis and reasoning, and not primarily by passions?

Partisan debate has also been stirred by the fact that, for better or for worse, many water resources activities have tended in recent years to become centered in the national government and its various instrumentalities. Vigorous criticism has been leveled not only at this realignment of civil functions, but at the increasingly tangled skein of national water resources administration that threatens seriously to thwart effective action. Alternative organizational schemes that have been proposed approach this latter problem in terms of competing theoretical postulates, and their adherents have loyally touted them as panaceas for our water woes—as perhaps they may well be. But ideal solutions must be circumscribed by what is politically possible, and powerful vested-interest groups, congressional and otherwise, can be relied upon obdurately and resourcefully to resist any thorough-going attempts to alter the status quo.

Apart from these organizational obstacles, certain fundamental policy issues must also be recognized and resolved. During the past decade, these issues have been the subject of intensive study by various official and quasi-official groups which, perhaps not surprisingly, despite their markedly divergent political and philosophical proclivities, have advanced proposals that are in most cases quite reconcilable. But, again, the extent to which these recommendations will be realized may largely be determined by quite immaterial and irrational considerations, if the past affords any reliable basis for prediction.

Certainly, a sound water resources program that faithfully reflects national needs and aspirations should not be beyond the attainment of an enlightened public in a democratic society. It is to a furtherance of this objective, therefore, that this symposium is confidently addressed.

MELVIN G. SHIMM.

FEDERALISM AND WATER RESOURCES DEVELOPMENT

ERNEST A. ENGELBERT*

No aspect of federalism is currently being subjected to more intensive public inquiry and appraisal than the intergovernmental relationships of water resources development. The rights and responsibilities of the federal government vis-à-vis the states in this area have become a subject of increasing political and administrative controversy ever since World War II. The warm debates over Hell's Canyon, Dinosaur National Monument, and the Dixon-Yates contract in the recent presidential campaign remind us how prominently matters of this kind have become major issues of public policy. Similarly, a review of federal and state-sponsored studies within the last decade shows that there have been more major investigations of various phases of water resources than of any other domestic function.¹

To a great degree, recent public interest in this area stems from the major demands that a growing economy, a rising standard of living, and an intensified national defense have placed upon the nation's water resources. Ever-widening concern with the organization and operation of water resources programs, however, must also be associated with the re-evaluation of our federal system of government which is currently taking place.² The centralizing influences of technology and communications and two decades of unprecedented national government growth during depression and war are forcing a sober reappraisal of the role of the states and local governments in our national system.

In no other arena are the complex aspects of federalism so starkly presented as in water resources. Their development epitomizes, perhaps better than any other function, the need for intergovernmental cooperation. Moreover, there are few functions in which programs for improvement can so quickly produce changes in the physical and social environment and in the character of government. Whether we turn to

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¹ From evidence assembled from materials furnished by the Council of State Governments and from checklists of governmental reorganization studies. During 1955-56, for example, thirty-one states were undertaking water studies of varying scope. See COUNCIL OF STATE GOVERNMENTS, *THE BOOK OF THE STATES*, 1956-1957, at 376 (1956).

² Some noteworthy examples are: COMM'N ON INTERGOVERNMENTAL RELATIONS, *REPORT TO THE PRESIDENT* (1955); ARTHUR W. MACMAHON (Ed.), *FEDERALISM MATURE AND EMERGENT* (1955); WILLIAM ANDERSON, *THE NATION AND THE STATES, RIVALS OR PARTNERS* (1955); LEONARD D. WHITE, *THE STATES AND THE NATION* (1953).

the wording of the latest political party platforms or to more scholarly studies, the significance of water resources development for our political system of federalism is greatly evident.

It would be an exaggeration to say that our federal system has now reached the political crossroads with respect to water resources programs and that no further large-scale development will occur until present federal-state controversies are resolved. The imperatives of water needs for a growing national economy will inevitably push developments forward, whether or not the political logic and institutions have been sufficiently formulated to guide the courses of action. But it is also significant that, as a nation, we are currently doing much soul-searching to find suitable alternatives to undue control and domination of resources developments by the federal government on the one hand, or to the weak and inadequate programs of the states on the other. We are less confident about solutions for this problem than we were in the 1930's. Today, fewer writings are found to the effect that the states are outmoded as agencies for water resources development or that the nation's salvation rests in more Tennessee Valley Authorities. Instead, the need for devising water resources programs that will strengthen the over-all political structure is recognized.

Within this setting, it is the object of this paper (1) to review briefly the relative positions of the federal government and the states for water resources development; (2) to evaluate some of the intergovernmental relationships in this field; and (3) to explore some courses of action which would strengthen, in particular, the role of the states.

I

THE STATUS OF FEDERAL AND STATE DEVELOPMENTS

A. Legal Powers

As in so many other fields of public activity, the legal powers of both the federal government and the states for water resources development are still evolving. Although the Federal Constitution does not specifically mention water resources, legislation and court decisions have demarcated primary federal and state responsibilities; but a vast legal no-man's-land still exists, particularly with respect to water rights. Currently, there are a number of judicial cases in western states wending their way to the nation's highest court, the decisions of which will have far-reaching impact upon the future course of water resources development.³

The federal government's authority over water resources stems from several basic powers granted by the Constitution, notably its powers over commerce on navigable streams, its proprietary powers over its own lands and property, and its

³ Most notable of cases on appeal to the United States Supreme Court is one in which the California Supreme Court, by a 4 to 3 decision, invalidated the federal 160-acre limitation in its application to private lands. *Ivanhoe Irr. Dist. v. All Parties*, 47 Cal.2d 603, 306 P.2d 824 (1957). This decision overturns a federal policy established in the passage of the Reclamation Act of 1902, 32 STAT. 388, and, if permitted to stand, could materially alter the Bureau of Reclamation's program in western states.

powers to appropriate funds to provide for the nation's general welfare.⁴ In addition, the federal government, on occasion, has been able to exercise certain jurisdiction over streams on the basis of its war and treaty-making powers, the former being an important legal justification for the early Tennessee Valley development.⁵ Upon these powers have been built the federal government's authority to improve navigation on navigable streams as well as nonnavigable tributaries, to carry out measures for flood control, to undertake irrigation and reclamation programs, to develop and dispose of hydroelectric power, to determine the use of water on the public domain, and to engage in large-scale river basin developments which are in the general interest. Corollary to these functions, the federal government is empowered to engage in fish and wildlife protection, recreational programs, pollution control, and related functions. In general, the federal government has been moving toward larger multiple-purpose projects.⁶

Despite what appears to be very extensive federal powers over water resources, however, the states are not without their own important spheres of jurisdiction, although these have not always been vigorously prosecuted. Perhaps most important is a state's authority, under its police power, to regulate various water activities for the general welfare, such as the production of water for domestic purposes or the control of sewage disposal. This, of course, includes the right to regulate industries engaged in different aspects of water use and development where these are not in conflict with regulations derived from federal powers. Of almost equal prominence is a state's power to determine the allocation and distribution of both surface and underground waters within the state. The states are permitted to adopt whatever system of water law they choose, including the law for those lands which have passed from the federal government to the states, provided it does not conflict with the federal government's powers over navigation.⁷ Finally, the states possess powers to engage in interstate action with respect to water use and development. Agreements reached via interstate compacts are valid, even though these may conflict with existing state law.⁸

At the risk of gross oversimplification, it can be said that, on the whole, the federal government's powers have been used to guide and control the development of major streams in the country, whereas the states have had greater responsibility for the distribution and use of waters locally. In the past, most of the constitutional questions have involved either the litigation of water rights or the demarcation of federal and state spheres of authority. More recently, however, in keeping with

⁴ The most comprehensive treatise on the constitutional aspects of water resources development is 3 PRESIDENT'S WATER RESOURCES POLICY COMM'N, REPORT (1950), entitled WATER RESOURCES LAW.

⁵ *Ashwander v. Tennessee Valley Authority*, 297 U.S. 288 (1936).

⁶ See 3 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 4, at 312.

⁷ To remove any question concerning water rights in states created out of federal territory, the Desert Land Act of 1877, 19 STAT. 377, as amended, 43 U.S.C. §321 (1952), in effect provided that all non-navigable waters on these lands should be reserved for public use under state law.

⁸ *Hinderlider v. La Plata River and Cherry Creek Ditch Co.*, 304 U.S. 92 (1938).

the growth of public administration, more cases have turned upon the powers of administrative agencies and the conduct of programs.

It is not unlikely, as both levels of government broaden and intensify their programs for water resources, that constitutional and legal conflicts will increase. At the moment, there is considerable agitation in western states for a review of federal-state legal relationships, and recently, a number of national organizations jointly sponsored a recommendation stating that "legislation is urgent to clarify the relative authority of the states and the federal government in the disposition of water."⁹ Many groups have found that the exploitation of legal issues is the best cover for an attack upon objectionable policies. It will take nothing less than a wise development of federalistic arrangements to keep these conflicts to a minimum.

B. Evolution of Programs

Within the legal framework, the evolution of federal and state programs for water resources have been conditioned by many of the same broad political and economic considerations which have influenced the development of other governmental functions. However, two unrelated factors, namely navigation and catastrophe, have been particularly significant for determining the unfolding of federal-state relationships. The importance of American waterways in opening the continent and civilizing the frontier gave the federal government, with its power over navigation, some strategic advantages in the development of this activity which it did not possess with respect to some other domestic functions. Similarly, the necessity for developing adequate protection against flood and drought disaster brought about a certain measure of intergovernmental cooperation at a far earlier stage in American history than might otherwise have been the case.

A number of distinguishing features can be noted in the historical development of federal-state water resources activities. Outstanding is the fact that both the federal and state governments have given leadership to phases of water development at various periods.¹⁰ For example, during the so-called canal-building era of the nineteenth century, the states were in the forefront in improving navigation of waterways; and a little later, along the banks of the Ohio and Mississippi Rivers, they were taking the initiative in flood control. During the latter half of the nineteenth century, however, after state debacles and mismanagements in canal building and levee construction, the federal government took the helm and has continued to be in the forefront of this activity. In other fields, such as the regulation of hydro-electric power development, the states also took the first steps toward control, but with the advent of federal intervention into this field under the Federal Power Act of

⁹ Second Inter-Organization Conference on Water Law, St. Louis, Jan. 24-25, 1956. Organizations represented at this conference were: American Farm Bureau Federation, Chamber of Commerce of the United States, Engineers Joint Council, Mississippi Valley Association, National Reclamation Association, National Rivers and Harbors Conference, and National Water Conservation Conference.

¹⁰ For a historical summary of the states' role in water resources development, see CLIFFORD J. HYNING, *STATE CONSERVATION OF RESOURCES* (1939); see also Lepawsky, *Water Resources and American Federalism*, 44 AM. POL. SCI. REV. 631 (1950).

1920,¹¹ state and federal responsibilities have developed somewhat simultaneously, particularly in the more progressive states. For still other water resources activities, such as the provision of urban water supplies, the states have had virtually exclusive sway. Viewed in perspective, the state and local governments were the most influential in determining the course of water resources development during the nineteenth century,¹² but beginning with the administration of Theodore Roosevelt, the federal government has gradually moved to the forefront to the point where it is the dominating force, at least on all of the country's major streams.

Another distinguishing aspect of water resources development in this country is that, at both the federal and state levels, water resources were initially developed for a single purpose and not on a related basis. Thus, the functions of navigation and flood control first received attention. Some protection of fish and wildlife was inaugurated by the states shortly after the Civil War, and toward the turn of the century, the first steps toward power regulation were taken. Also, during the 1880's, the western states became concerned with irrigation, rapidly followed by federal participation through the Carey Act of 1894.¹³ Among the functions which were unilaterally promoted after the turn of the century were pollution control, power generation, and recreational development.

The concept of multiple-purpose planning for water resources does not appear to have been publicly perceived until after 1900, when flood control, power development, and irrigation began to be linked in development.¹⁴ However, it was not until after World War I that the federal government, with the enactment of the Federal Power Act in 1920 and the inauguration of the "308 reports" in 1927,¹⁵ adopted multiple-purpose water resources development as official public policy.¹⁶ Among the states, California was perhaps the first to think in terms of basin-wide development, when the legislature, in 1921, authorized the first studies leading to the adoption of the California Water Plan in 1931.¹⁷

It is also noteworthy that much of the state development of water resources functions has come about through the initiative of local governments, with a minimum of state direction or support. This is particularly true for irrigation, drainage, and urban water supplies, where local districts underwrote the costs of much of the first development. Indeed, the state governments would not be as far advanced as they are

¹¹ 41 STAT. 1063, 16 U.S.C. §§791 *et seq.* (1952).

¹² State expenditures for the improvement of inland navigation totaled more than \$200 million at the turn of the century, more than twice the expenditures of the federal government for this purpose up to that time. See Renne, *State Conservation and Development of Natural Resources*, State Government, June 1950, p. 134.

¹³ 28 STAT. 422, 43 U.S.C. §641 (1952).

¹⁴ Cross, *W. J. McGee and the Idea of Conservation*, 15 *THE HISTORIAN* 148 (1953), states that it was the Inland Waterways Commission, created in 1907, "which first put before a broad public the idea of multi-purpose river basin control. . . ." For the evolution of this concept, see also GIFFORD PINCHOT, *BREAKING NEW GROUND* (1947).

¹⁵ See H.R. Doc. No. 308, 69th Cong., 1st Sess. (1927).

¹⁶ See 3 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 4, at 406-10.

¹⁷ See House Committee on Interior and Insular Affairs, *Central Valley Projects Documents*, H.R. Doc. No. 416, 84th Cong., 2d Sess. 4-8 (1956).

in some activities were it not for local enterprise. As it is, agencies of the federal government, notably the Bureau of Reclamation and the Corps of Engineers, now by-pass state agencies in many states in their dealings with local units.¹⁸

It is risky to attempt any assessment of how the federal government and the states now stand with respect to the development and control of various water functions. Not only do the states vary in their leadership in given fields, but there are considerable regional differences. As examples, Wisconsin has led in utility regulation; Montana has demonstrated considerable initiative in irrigation development; and California has fostered basin-wide planning. Yet, for the purpose of showing the relative importance of the two levels of government for specific functions, the following comparison can be made: The federal government now dominates in the fields of navigation, flood control, hydroelectric power development, irrigation, and river basin planning. The states dominate in the fields of water rights, urban water supplies, drainage, and fish and wildlife management. The responsibilities are more shared in the fields of power regulation, recreational planning, pollution control, and small watershed development. On federally-sponsored and financed projects, the federal government's influence is naturally greater. For the functions in which state and federal responsibilities overlap, trends toward greater interlevel cooperation have been evident, although they fall considerably short of integrated development.

C. Comparative Advantages

During the last quarter of a century, the states have been overshadowed by the federal government in water resources development. The federal government, it is true, does have some inherent advantages in carrying out large-scale improvement programs which cut across state boundaries. However, much of the federal government's superior progress has come through state default, since the states have not effectively exploited their opportunities.

Taken as a group, the states have not maintained a consistent constitutional position with respect to their powers and responsibilities for water resources development, nor have adequate policies been formulated to guide their relationships with the federal government in this field. During times of prosperity, the states have over-emphasized states' rights to the point where they have been so concerned with defending their sovereign powers against encroachments by the federal government or other states that they have not given desirable leadership to proposed undertakings. On the other hand, during periods of economic decline, the states have shifted quickly to the other extreme of depending upon the federal government in their solicitations for national aid. Nowhere is this better illustrated than in the State of California, where, during the early days of the depression, state officials pleaded with the federal government to have the Central Valley Project constructed as a

¹⁸ Some of the close working relationships between local units and federal agencies are set forth in CHARLES MCKINLEY, *UNCLE SAM IN THE PACIFIC NORTHWEST* (1952).

federal project, and where, since World War II, there has been strong sentiment for state repurchase of federal facilities.¹⁹

In contrast to state fluctuations, the federal government's role has been expanding, permitting it to step into situations where the states have not had adequate programs. As Congressman Clair Engle has pointed out in connection with the current struggle between various groups in the State of California and the Bureau of Reclamation:²⁰

The Bureau of Reclamation has often been criticized for decisions it has made. But often the Bureau of Reclamation has made decisions because there has been no machinery in the State of California and no adequate state law to cover the problems which have arisen.

Until the states adopt a more consistent attitude on the question of states' rights for water resources developments, they will inevitably be at a disadvantage relative to the federal government in this field. Overemphasis upon states' rights rather than states' responsibilities leads to narrow and restrictive programs out of keeping with water needs.

Much has been made of the fact that state boundaries are poorly drawn for effective state participation in water resources development. To be sure, watersheds do not conform to state lines; but by the same token, the federal government is confronted with the necessity of dealing with and through the agencies of several states to operate effectively in a region, so that the argument of state boundary limitations has been much overplayed. The extent to which state boundaries are barriers to effecting wise water resources development will depend upon the legal and administrative arrangements that are worked out between the federal government and the states to deal with problems that cut across state lines. On this score, state weaknesses can be attributed more to poor water resources policies and institutional organization than to inadequate geographical jurisdictions.

The states have also operated under a handicap in this area because the general suspicion exists that the states are not strong enough to protect the public interest. Historically, this suspicion is well-justified, since the states' mismanagement of mineral, forest, and public domain lands constitutes a sordid chapter in American history. Furthermore, a few groups primarily interested in the exploitation of natural resources appear to dominate legislatures and administrative agencies in a number of states, particularly in the West.²¹ Although this domination may not always be unwholesome, it has, nevertheless, led many to view the federal government as the public's best representative for controlling the nation's major water resources.

¹⁹ See HUGH G. HANSEN, *CENTRAL VALLEY PROJECT: FEDERAL OR STATE?* (Cal. Assembly Interim Comm. Rep., Vol. 13, No. 6, 1955). It should be noted that since 1954, support for state purchase of the Central Valley Project has declined largely because of the fear that federal support for other needed state water construction projects would be lost.

²⁰ IRRIGATION DISTRICTS ASS'N OF CALIFORNIA, *WATER POLICY PROBLEMS WITH SPECIAL REFERENCE TO FEDERAL-STATE RELATIONSHIPS* (1951).

²¹ See, e.g., MORRIS GARNSEY, *AMERICA'S NEW FRONTIER: THE MOUNTAIN WEST* (1950); JOSEPH KINSEY HOWARD, *MONTANA, HIGH WIDE AND HANDSOME* (1953).

The policy-making and administrative agencies of the federal government undeniably draw support from a broader and more varied political base than do state agencies. Moreover, where state political support may be too biased to formulate a balanced water resources program, the federal government can counterbalance undesirable state and intraregional political pressures with pressures from other regions and the nation. On the other hand, neither the legislative nor the executive branches of the federal government have had anything approaching uniform success in integrating political forces into unified water programs, judging by experience in the Missouri, Colorado, or Columbia River basins. More often than not, Congress has abdicated its responsibilities for forming over-all policies, while administrative agencies have worked out some form of Pick-Sloan compromise, so that the final product is often little better than what might have been achieved through interstate negotiation.²² The evidence indicates that there needs to be a healthy interplay of federal and state political forces if balanced water resources development is to be achieved.

On the fiscal front, there is no doubt that the federal government's superior financial resources have given it tremendous advantages in determining the course of development in this area. Furthermore, the costs of huge multiple-purpose projects are more feasibly underwritten by the federal government, irrespective of what part it may play in the project's operation. Nevertheless, the fiscal capacity of the states to undertake major programs has not been fully assessed. Although we may be somewhat closer to developing general criteria for determining which costs should be borne by the states and private beneficiaries and which by the federal government, these criteria have not been systematically applied.²³

To be sure, the states vary in their fiscal capacity, with states such as New York and California in a much better position to undertake projects on their own credit. Most of the states, however, have not effectively addressed themselves to the problem of organizing their fiscal resources and working out financial arrangements with local government units to participate systematically in water resources developments. That much can be done by state and local initiative has been amply demonstrated in Southern California, where state and local agencies have expended over a billion dollars in water development and distribution facilities alone, a figure which becomes more arresting when compared with the approximately six hundred million dollars that the federal government has spent for the entire Central Valley development.²⁴ Admittedly, the Southern California achievement is unique, but it, nevertheless, suggests that federal dominance in recent water resources programs is not wholly a consequence of state fiscal inadequacies.

²² A study of congressional failure to deal adequately with Missouri River basin development is to be found in an article by Hart, *Legislative Abdication in Regional Development*, 13 J. POLITICS 393 (1951).

²³ Both the President's Water Resources Policy Commission and the Presidential Advisory Committee on Water Resources Policy have sharpened the principles of cost-sharing, but these have not yet been adopted as congressional policy. See 1 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 4, c. 3; PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, WATER RESOURCES POLICY 29-35 (1955).

²⁴ From figures furnished by the Los Angeles City Department of Water and Power and the Metropolitan Water District of Southern California.

From the standpoint of personnel and administrative organization, both the federal government and the states show some deficiencies in water resources development, although here, again, the states are in the worse position. The federal government is definitely superior in personnel and research facilities. It has developed a far better career service than all but a very few states and over the last half century has built a distinguished professional corps in agencies such as the Geological Survey, the Bureau of Reclamation, and the Corps of Engineers. Moreover, with this personnel have been established research programs and facilities which have given the federal government distinct advantages in gathering data, conducting investigations, and formulating programs. In contrast, the majority of states have been slow to adopt the merit system, have maintained pay scales too low to secure competent men, and have not provided a good working environment for the professional person. As a result, many of the states now rely primarily upon the federal government for information in such fields as topographical mapping or water runoff. Needless to say, under these circumstances, representatives of state agencies have not been in a good bargaining position with their federal counterparts.

A number of other essays in this symposium deal with the inadequacies of federal administrative organization for water resources development. However, it should be noted here that the failure to develop more integrated organization and programs at the federal level has had an unwholesome influence upon state administrative operations. Federal bureaus, such as the Bureau of Reclamation and the Corps of Engineers, have competed for the allegiance of state agencies and local units of government.²⁵ Conversely, state governmental units and groups have often used their political power and influence to support the programs of federal agencies. Although there is much that is healthy and inevitable in professional and program liaison between federal and state agencies, interlevel interplay has also been a factor in keeping state administrative organization splintered and has defeated much basin-wide planning.²⁶

The states have been less able than the federal government to afford the luxury of poor administrative organization for water resources development, since so much of a state's effectiveness in dealing with the federal government and other states hinges upon the unified front which a state can maintain. Over the last decade, a sizable number of the states have underwritten "little Hoover Commission" surveys of state administrative organization, and several have recommended an integration of water resources activities into a single agency or into a broader department of natural resources.²⁷ A few states, as, for example, Arkansas and Wyoming, have

²⁵ ARTHUR MAASS, *MUDDY WATERS: THE ARMY ENGINEERS AND THE NATION'S RIVERS* (1951), is an excellent case study of how a federal agency uses its powers and patronage to influence state and local authorities.

²⁶ For a number of excellent illustrations on this point, see MCKINLEY, *op. cit. supra* note 18, and MARIAN E. RIDGEWAY, *THE MISSOURI BASIN'S PICK-SLOAN PLAN* (1955).

²⁷ See COUNCIL OF STATE GOVERNMENTS, *STATE REORGANIZATION IN 1950* (1950); *THE BOOK OF THE STATES, 1952-1953*, at 388-89 (1952); *id.* 1956-1957, at 373-74 (1956). States which have recently established state water resources boards include Kansas, Minnesota, North Carolina, Oregon, Rhode Island, and South Dakota.

tried to overcome the lack of administrative integration by creating coordinating councils. But on the whole, the organizational progress has not been significant, since states have not appreciated the importance of relating water planning, pollution control, fish protection, or other activities to a program of coordinated management.²⁸ Furthermore, multiple-purpose programming has been retarded because the states have not generally promoted drainage-basin planning, even on an intrastate basis.²⁹ As a result, major water resources problems within states have been obscured, and many courses of action have been ineffectual.

In summary, there are few fronts upon which the states have maintained parallel status with the federal government in water resources development in recent years. Although there has been a high degree of federal-state administrative cooperation for many water resources activities, the federal government has, more often than not, been the dominant partner. What is important to note, however, is that many of the state shortcomings in this field stem not from lack of adequate powers or facilities, but from a more general weakness of state governments in political, legislative, and executive affairs.³⁰ For example, the fact that the states did not see fit to maintain the state-wide planning programs which were inaugurated in the 1930's has affected the subsequent course of water resources development. Yet, it is impossible to achieve optimum results under our federal system of government without having wholesome state participation. As the Commission on Intergovernmental Relations has so aptly stated: "The larger the national and international responsibilities of the government in Washington become, the more important it is to have state and local governments to carry out their proper responsibilities."³¹

II

FEDERAL-STATE RELATIONSHIPS

A. Federal versus State Responsibilities

What are the proper responsibilities of the federal government vis-à-vis the states for water resources development? Should federal responsibilities be greater for basins which cut across state boundaries than for basins which lie primarily within the confines of one state? Should the economic wealth of a state or a region be a relevant factor in determining the degree of federal versus state action?

²⁸ For the pattern of water resources organization in southern states, see VERA BRISCOE, JAMES W. MARTIN, AND J. E. REEVES, *SAFEGUARDING KENTUCKY'S NATURAL RESOURCES* (1948); LEE S. GREENE, VIRGINIA BROWN, AND EVAN W. IVERSON, *RESCUED EARTH* (1948); ROBERT B. HIGHSAW, *MISSISSIPPI'S WEALTH* (1947); CHRISTIAN T. LARSEN, *SOUTH CAROLINA'S NATURAL RESOURCES* (1947); HUBERT MARSHALL AND ROBERT J. YOUNG, *PUBLIC ADMINISTRATION OF FLORIDA'S NATURAL RESOURCES* (1953); JOSEPH M. RAY AND LILLIAN WORLEY, *ALABAMA'S HERITAGE* (1947); PAUL W. WAGER AND DONALD B. HAYMAN, *RESOURCE MANAGEMENT IN NORTH CAROLINA* (1947).

For information on western states, refer to OSTROM, *State Administration of Natural Resources in the West*, 47 AM. POL. SCI. REV. 484 (1953).

²⁹ Some exceptions are the Miami and Muskingum Conservancy Districts in Ohio, the Willamette River basin studies in Oregon, and the Central Valley developments in California.

³⁰ See COMM'N ON INTERGOVERNMENTAL RELATIONS, *op. cit. supra* note 2, at 36-58.

³¹ *Id.* at 57.

Ever since the nineteenth century, when different reimbursement standards were established for flood control and irrigation, it has been national policy that the obligations of the federal government would not be the same for all phases of water development. Thus, different schedules of state, local, and private repayments now exist for hydroelectric power, reclamation, and other functions. Two criteria which have figured prominently in determining the portion of costs to be borne by the federal government, although not on any scientific basis, have been the probabilities of disaster and the degree to which the benefits are local in character. Recent studies, such as those of the President's Water Resources Policy Commission, have attempted to define more precisely the division of payment between the levels of government for various functions.³²

Both the federal government and the states, however, bear obligations and responsibilities for water resources development that go beyond specific functions or activities. Certain objectives need to be kept in view in determining what is desirable participation by both levels of government in this area. They may be stated as follows:³³

First, the federal government bears a responsibility for fostering water resources projects which result in a maximum national economic and social product. The social product is not easily identified, much less measured, but it includes tangible factors, such as the number of kilowatt hours produced by a project, and intangible factors, such as the project's contribution to the welfare of a minority group. It is the task of the political process at the national level to weigh the types of developments in specific locations that will contribute most to the total social product.

Another federal objective in water resources development should be to achieve optimum income distribution. Federal expenditures cannot be justified for projects the benefits of which accrue to a few dominant persons or groups. The concept of minimum income standards is an integral part of the nation's democratic traditions and needs to be observed in these undertakings.

Closely related to the foregoing point is the obligation of the federal government to see that water resources development programs promote and maintain democratic institutions. Decisions involving these programs should be reached with as much public participation as possible. The nation has a stake in formulating water plans which are representative and reflect the public interest.

Finally, the federal government bears a responsibility for aiding states to undertake water resources development programs which will make a distinctive contribution to the national economy and which cannot be underwritten locally. The federal government can assist states in translating national goals into regional programs.

³² 1. PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 4, at 67-86. See also PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, *op. cit. supra* note 23 and House Committee on Public Works, *The Allocation of Costs of Federal Water Resources Development Projects*, 83d Cong., 2d Sess. (1952).

³³ Some of the discussion for these paragraphs has been adapted from *Interregional Linkages*, in DAVID REVZAN AND ERNEST T. ENGELBERT (EDS.), *PROCEEDINGS OF THE WESTERN COMMITTEE ON REGIONAL ECONOMIC ANALYSIS* 96 (1954).

Where states or regions are adversely affected by the consequences of developments within other regions, such as was the case when industry migrated from New England to regions in which the federal government had financially supported projects offering hydroelectric power at lower rates, the federal government also has an obligation to assist the disadvantaged areas in making economic readjustments. National policy should be designed to compensate for serious regional dislocations and to promote equilibrium between the competing economies of different basins.

The states, likewise, need to strive for certain objectives in intergovernmental participation in water resources development. If states view their interests within the framework of the national economy, then federal policies should complement state programs. The states, in the long run, stand to benefit from national policies which foster maximum economic product, optimum income distribution, democratic decision-making, and the like. The states, however, need to protect their rights by striving for the following objectives:

First, states should endeavor to receive benefits from water resources development programs proportionate to their contribution. Individual states may well lose their share of rightful gains to other states unless they press their claims. This, of course, does not preclude a state, for reasons of national policy, from receiving benefits from water resources development above and beyond its proportional share at specific stages of its growth. Indeed, in a growing economy it may be expected that there will be some disequilibrium between states and basins; but disproportionate benefits should be explicitly recognized and justified by national policy.

The states should resist water resources development programs which would permit areas outside the basin from draining off local resources without corresponding contributions to the national economy. The states need to be on guard that basins do not become satellites of other regions. Though economic ties will be inevitably stronger between some basins than others, the relationships should be of mutual benefit.

Equally important is the objective that states should be permitted to organize the economies of basins with as much self-containment as is desired, consonant with the national interest. Economies which are reasonably diversified are more apt to develop the potentialities of states. Moreover, a diversified economy proliferates economic and social groups and provides a stronger political base.

Finally, states should endeavor to have as many political decisions as possible concerning water resources development made locally. Some decisions involving interregional and national issues should be reached at the national level, but if national policies concerning a basin's development are clear, then a greater number of corollary decisions can have local origins. Decentralizing the decision-making process into the state and local areas offers the advantage of broadened popular participation.

Enough of the basic interests of both the federal government and the states in water resources development has been set forth to show that the reconciliation of these objectives into a logical plan calls for balanced and pervasive intergovernmental

relationships. Undue domination of one level of government by the other not only reduces the possibilities of achieving optimum development, but it weakens the basic structure of federalism. Where there are political or financial obstacles, it may be desirable to have either the federal government or the states take the leadership in getting a project under way, but provision for subsequent joint participation should be made.

B. Effectiveness of Federal-State Relationships

Over the years, a high degree of cooperation has evolved between various agencies of the federal government and the states in the formulation and administration of water plans. To cite some diverse examples, in the field of research, the Geological Survey has been working with state water agencies in the measurement of surface and ground water supplies, the Bureau of Reclamation with state agricultural experiment stations in the study of irrigation practices, and the Fish and Wildlife Service with state university departments of wildlife management on animal habitat factors. In the field of legislation, many programs call for either joint program formulation or review. Thus, a majority of the states followed the United States Department of Agriculture's model enabling act in establishing state soil conservation districts; the Bureau of Reclamation and the Corps of Engineers are required to furnish proposed projects to the states for consultation and review; and the recently enacted Water Pollution Control Act³⁴ instructs the Public Health Service to work with state agencies in the formulation of pollution-control programs.

Federal-state relationships are perhaps most intermeshed in administrative and operating phases of water resources development programs. Several federal agencies use joint facilities with state agencies and exchange equipment. The Soil Conservation Service furnishes much of the technical services to local conservation districts. The Corps of Engineers often works out a shared program of construction with state and local public works agencies.³⁵ Perhaps the most extensive federal-state relationships are those of the Bureau of Reclamation, which, under federal statutes, negotiates water contracts with local districts to build and operate projects for the distribution of water in accordance with state water law, with the facilities being divided between the federal government and local districts when the project is paid for.

Some equally complex federal-state cost-sharing arrangements have been worked out. As examples, states now furnish rights-of-way and obtain land sites for Corps of Engineers projects. Matching grants are extensively employed. Federal loans are available to finance municipal sewage-treatment facilities. Payments in lieu of taxes are made to local units by the United States Department of Agriculture for federal acquisition of land for reservoir sites and project facilities.

³⁴ 62 STAT. 1155 (1948), 33 U.S.C. 5466 (1952).

³⁵ A description of the involved relationships of the Corps of Engineers with state and local governments is to be found in RICHARD W. BIGGER, *FLOOD CONTROL IN METROPOLITAN LOS ANGELES* (unpublished Ph.D. dissertation in University of California at Los Angeles Library 1954).

Despite extensive and well-worked-out arrangements between many agencies, however, federal-state relationships have not been conducive to unified water resources planning and development. A review of recent progress in the Missouri, Columbia, Colorado, and Arkansas-White-Red River basins, to mention four of the more prominent, reveals a number of shortcomings. Too much of the planning and programming between federal and state agencies has been unilateral, without sufficient relationship to basin-wide objectives and needs. As the President's Water Policy Commission reported, "... projects are undertaken as if they were ends in themselves, instead of parts of a program designed to meet the needs of the land and of our people."⁸⁶ Agencies, such as the Corps of Engineers and the Bureau of Reclamation, employ different standards of measurement and feasibility, so that competing programs are offered to the states for bargaining and compromise.⁸⁷ State programs and agencies have often been too weak to get full advantage from cooperating with federal agencies. The Federal Pollution Control Program, for example, is not as successful as it could be, because in many states, adequate regulatory measures have not been enacted.⁸⁸ Perhaps most important of all, the states, independently or collectively, have not sufficiently identified their basic interests and objectives in water resources development so that common goals can be effectively achieved.

Much has been written since World War II about administrative arrangements designed to improve water resources development programs. Although most of the writers will agree that basins are sufficiently different in character to warrant some distinctive administrative framework, proposals for organizational reform fall into three basic categories: (1) those which emphasize more federal leadership; (2) those which emphasize more state leadership; and (3) those which emphasize more shared responsibilities between the federal government and the states. Let us look briefly at federal-state relationships under each of these alternatives.

Advocates of stronger federal leadership support either the establishment of an independent corporation for each basin, along the lines of the Tennessee Valley Authority, or interdepartmental coordinating commissions for each basin with a chairman appointed by the President.⁸⁹ Since the second form of organization has not been instituted, observations concerning federal-state relationships must be limited to the experience of the TVA. Those who have observed the salutary changes that have taken place in state and local government in the seven states within the basin would be inclined to agree that, if anything, TVA has revitalized many

⁸⁶ 1 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 4, at 43.

⁸⁷ A number of these conflicts are set forth in MISSOURI BASIN SURVEY COMM'N, *MISSOURI: LAND AND WATER* 215-22 (1953).

⁸⁸ *Id.* at 180.

⁸⁹ For a cogent analysis of the merits of the commission plan, see McKinley, *The Valley Authority and Its Alternatives*, 44 AM. POL. SCI. REV. 607 (1950). The interdepartmental coordinating commission was favored by the President's Water Resources Policy Commission.

state institutions.⁴⁰ Many of the statutory provisions setting forth the Authority's powers have required participation with state and local governments.⁴¹ The philosophy of Lilienthal, Morgan, Clapp, and others who have shaped the Authority's programs have been anti-big government in viewpoint.⁴² Generally speaking, the governors and representatives in Congress from the TVA region have been the Authority's strongest supporters, which would hardly be the case if the agency were deemed to be undermining the states.⁴³ On several counts, therefore, the Authority would appear to receive a clean bill of health with respect to state relationships.

Yet, there is evidence that perhaps federal-state relationships in the Tennessee Valley have not been studied intensively enough, and that, in fact, the states in that region have lost some basic powers over water resources development which they cannot expect to regain short of state recapture of the entire project. A recent study by Elliot Roberts finds that in such basic operations as navigation, power distribution and regulation, and flood control, the TVA exercised exclusive or dominant jurisdiction.⁴⁴ On ancillary issues, such as research or payments in lieu of taxes, Roberts' analysis indicates that the TVA was more willing to seek state aid and participation so long as its control over the basic aspects of river development would not be compromised. Although the author does not decry the TVA dominance, he concludes, in his final chapter, that a "myth of partnership" has been built around federal-state relationships in the Tennessee Valley.

Perhaps the TVA experience demonstrates that it is impossible to divide the basic responsibilities for the control of a river between two levels of government and agencies. Certainly, Roberts' conclusions will give incentive to supporters of state control to improve their arsenal of administrative weapons. To state advocates, a limited number of courses of action are open, depending upon whether the basin is largely within a state or cuts across state lines.

Concerning intrastate basins, the state, with the participation of private enterprise, may either (1) own and operate the facilities; (2) own the facilities and authorize federal operation; or (3) operate the facilities under federal ownership. With the exception of the Central Valley in California, drainage basins lying within the confines of one state are relatively small, and these, in a majority of cases, feed into interstate basins, so that the states are not in a very good position to exercise exclusive jurisdiction on major watersheds. However, a few states have fostered state or private ownership of facilities in some intrastate basins. The Wisconsin Valley Improvement Company, under state regulation, has developed the power facilities for

⁴⁰ See, e.g., Ray, *The Influence of the Tennessee Valley Authority on Government in the South*, 43 AM. POL. SCI. REV. 922 (1949).

⁴¹ See Durisch, *TVA and State and Local Government*, in ROSCOE C. MARTIN (Ed.), *TVA, THE FIRST TWENTY YEARS* C. 15 (1956).

⁴² See DAVID E. LILIENTHAL, *TVA: DEMOCRACY ON THE MARCH* (1944); see also GORDON R. CLAPP, *THE TVA: AN APPROACH TO THE DEVELOPMENT OF A REGION* 71-92 (1955).

⁴³ See ELLIOT ROBERTS, *ONE RIVER—SEVEN STATES: TVA—STATE RELATIONS IN THE DEVELOPMENT OF THE TENNESSEE RIVER* 2 (1955).

⁴⁴ *Id.* at 89-96.

the entire length of the Wisconsin River.⁴⁵ In Montana, the State Water Conservation Board has developed projects totalling "26.7 per cent of the total acreage irrigated in the State."⁴⁶ Although these kinds of examples are few and far between, the evidence suggests that state and local governments could be more resourceful in initiating and conducting basin programs.

With respect to alternative (2), to the author's knowledge, there are no instances of state ownership of basin facilities under federal operation, nor is this alternative being recommended by states' rights advocates. Where a state is financially able to construct projects, little would be gained from the state's viewpoint from placing the management of these projects in federal hands. The states might jointly pledge their resources to develop a project on an interstate stream to be operated by the federal government, but this circumstance appears unlikely.

There is more support for alternative (3)—namely, state operation of federally-owned projects. This method is being currently proposed in California for the Central Valley, where the federal government has a large investment which presently appears too great for that state financially to assume. How much the principle of partnership would gain would depend upon the standards which the federal government sets for the project's operation. One expert who has carefully studied the California proposal concludes that there is little likelihood "that the application of federal laws or controls would be relaxed."⁴⁷ Even so, many persons believe that there are advantages to be derived by the states from state operation of basin projects under federal ownership, despite strict federal standards.

C. Interstate Compacts

The more serious problem of federal-state relationships is found in the interstate basin. Here, the interstate compact has been the primary organizational arrangement proposed. Until the enactment of the Colorado River Compact in 1928, the interstate compact, as far as water resources are concerned, had been primarily used to settle boundary disputes.⁴⁸ The Colorado River Compact was hailed as the beginning of a new era in state water development because it was the first compact to deal with the interstate allocation of water resources and because it covered a large basin. Since that time, nearly a score of interstate water compacts have been negotiated, among the most recent significant ones being the Ohio River Valley Sanitation Compact in 1948, the Upper Colorado River Basin Compact in 1949, the Connecticut River Compact in 1953, and the Columbia River Commission and the Great Lakes Compacts, the latter two now in the process of ratification.⁴⁹

⁴⁵ See Engel, *Wisconsin's Answer to a River Problem*, American Forests, Sept. 1950, p. 7.

⁴⁶ See R. W. Bowman, *Resource Development and the Missouri River Basin* 105 (Agricultural Experiment Station, Montana State College Mimeo. Circ. No. 58, 1951).

⁴⁷ Statement by Norman Sturm, California Division of Water Resources, quoted in Hansen, *op. cit.* *supra* note 19, at 136.

⁴⁸ See Frederick L. Zimmerman and Mitchell Wendell, *The Interstate Compact Since 1925*, c. 1 (1951).

⁴⁹ For a list of interstate compacts, see Council of State Governments, *Interstate Compacts 1783-1956* (1956).

Proponents have lauded the compacts as an instrument for water resources development on a number of fronts. It is presumed to offer greater opportunity for state initiative and responsibility; it permits local and regional solutions to the immediate problems of an area; it is stated to be a good vehicle for the establishment of joint administrative machinery; it requires both state and federal consent to be operative; and it is an excellent instrument for fostering a healthy federalism.⁵⁰ Even the most ardent enthusiasts of the compact, however, would admit that in no major basin of the country has the compact succeeded in placing the states on a par with the federal government in water resources development. No administrative agency has yet been evolved out of a compact with sufficient powers and funds to plan for, much less carry out, an integrated basin-wide program.

Critics, in turn, acknowledge that the compact has limited usefulness as an interstate device for resolving legal issues or specific disputes but point out that it is not the machinery for dealing with functions that must be administratively evolved and in which the signatories have competing interests. The commission appointed by the President to make recommendations for administrative organization for the Missouri basin concluded that interstate compacts do not build sufficient regional loyalty and that even a federal-state compact in which the federal government was a more active member "goes too far in the direction of elevating localized state interest over those of the basin and the nation."⁵¹

A reappraisal of the interstate compact leads to the conclusion that, to date, this method has not fostered much integrated water resources development but that it has virtues as an instrument for intergovernmental cooperation. It would appear that we may now be in a position to capitalize on our experience and use compacts as a means of sharing intergovernmental responsibilities and obligations. The chief weakness of compacts has been that they have negotiated agreements too precisely and in too much detail, without sufficient information and study of the problems involved. Moreover, compacts have not provided the proper kind of administrative machinery to deal with the evolving problems of a basin. Some of the newer compacts are endeavoring to deal with these shortcomings. The Upper Colorado River Basin Compact creates an interstate administrative agency and provides for some administrative discretion in dealing with water allocations.⁵² The Sabine River Compact negotiated between Louisiana and Texas in 1956 provides "for a degree of administrative adjudication of water rights by the interstate compact agency."⁵³ Interstate compacts, however, will never be wholly successful unless they can be effectively tied into existing federal-state arrangements.

⁵⁰ See ZIMMERMAN AND WENDELL, *op. cit. supra* note 48, c. 7; VINCENT THURSBY, INTERSTATE COOPERATION c. 6 (1953); COUNCIL OF STATE GOVERNMENTS, THE BOOK OF THE STATES, 1950-1951, at 32-33 (1950).

⁵¹ MISSOURI BASIN SURVEY COMM'N, *op. cit. supra* note 37, at 10. For a reply to the Commission's statements on the compact method, see Zimmerman and Wendell, *Representation of the Region in Missouri Basin Organization*, 48 AM. POL. SCI. REV. 152 (1954).

⁵² Act of April 6, 1949, art. 8, 63 STAT. 35.

⁵³ See COUNCIL OF STATE GOVERNMENTS, *op. cit. supra* note 1, at 17.

D. Interagency Basin Committees

A new administrative device which has been developed during the last decade to improve intergovernmental coordination has been the interagency basin committee. Pressures for establishing coordinating committees emanated at both the state and federal levels. During the late 1930's, a number of the states became concerned that they needed some sort of interstate organization to counter the dominance of federal programs and to stave off the threat of valley authorities. Federal officials, in turn, feared growing adverse public reaction to the conflicts and competing programs of federal agencies, highlighted during the war by the Bureau of Reclamation-Corps of Engineers controversy in the Missouri basin. In addition, at both levels of government, there was a genuine desire to improve water resources planning and development.

The genesis of the basin committee was in the Missouri basin when, in 1942, the five northern states organized the Missouri Basin States Committee, shortly thereafter expanded to include all ten states of that watershed.⁵⁴ This was followed, in 1943, by the creation of a Federal Inter-Agency River Basin Committee (FIARBC) in Washington, D. C., established by informal agreement and composed of the heads of the Bureau of Reclamation, Corps of Engineers, Federal Power Commission, and the Land-Use Coordinator of the Department of Agriculture.⁵⁵ Passage of the Flood Control Act of 1944,⁵⁶ which approved the Pick-Sloan Plan for the development of the Missouri basin, gave further impetus to the establishment, in 1945, of a regional interagency basin committee for the Missouri basin, composed of representatives of parent agencies of the FIARBC and including, by invitation, the governors of the states.

Since that time, interagency basin committees have been organized for four other major regions: the Columbia (1946); the Pacific Southwest (1948); the Arkansas-White-Red (1950); and New England-New York (1950). The basin committees are similar in that they all have approximately the same federal agency representation. Three, the Columbia, Missouri, and Pacific Southwest Committees, were set up by the parent committee in Washington and are voluntary but continuing bodies; whereas the Arkansas-White-Red and New England-New York Committees were created by presidential directive to prepare "a survey report for submission to the Congress."⁵⁷ All have approximately the same federal agency membership, and all but the Pacific Southwest Committee have official state representation. Three of the committees have rotating chairmanships, and all, with the exception of the Missouri Basin Committee, do considerable work through subcommittees. All of

⁵⁴ See Minutes for Joint Meeting of the Missouri Basin and Arkansas-White-Red Basins Inter-Agency Committees, Vicksburg, Miss., Jan. 31, 1954, p. 2.

⁵⁵ *Id.* at 6. The Departments of Commerce; Health, Education, and Welfare; and Labor subsequently joined the FIARBC.

⁵⁶ 58 STAT. 887, 33 U.S.C. §701 (1952).

⁵⁷ 3 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, TASK FORCE REPORT ON WATER RESOURCES AND POWER 1439 (1955).

the basin committees meet several times a year to furnish the membership with information concerning the development of agency programs and to discuss problems of a technical and administrative nature. An examination of the minutes of the committees shows considerable variation in the degree of participation both among federal agencies and state representatives, with meetings that were relatively uneventful and others marked by considerable controversy. None of the committees, however, can take action unless there is unanimous agreement.⁵⁸

What have the interagency basin committees done to improve federal-state relationships in water resources planning? They have served as a means of interdepartmental and interjurisdictional communication and have fostered an awareness of basin-wide problems.⁵⁹ They have facilitated a certain amount of cooperation in research and administrative operation. On occasion, the basin committees have been able to solve minor issues which unattended would have led to friction between agency personnel.

The interagency basin committees, however, have not become integrated intergovernmental planning bodies. In the Arkansas-White-Red basin, where the Committee was most closely knit and where the pressures for coordination from Washington were greatest, the Committee could not reach agreement on one basic plan for stream development. The experience in that region demonstrated that federal agencies in particular were opposed to any basin plans which did not conform to the policies of their respective agencies.⁶⁰ Parallel situations existing in the other basins led the Hoover Commission Task Force to conclude that coordination would continue to fail until there were stronger congressional directives, more consistent policies, and a review board "which is by law superior to the agencies."⁶¹

The states, on the whole, have not exercised a very influential role in those basins where they are participating on the committee. Their interests in specific problems have varied, depending upon their geographical location in the basin.⁶² They have been reluctant to become involved in federal agency controversies and have preferred dealing unilaterally with federal agencies. Moreover, being sovereign units, the states have not felt fully committed to basin committee agreements.⁶³

Nevertheless, despite the inadequacies of interagency basin committees, recent presidential commission studies, including the Hoover Commission Task Force on Water Resources and Power and the Presidential Advisory Committee on Water Resources Policy, have recommended the continuation and strengthening of these bodies. It has been generally recognized that interagency basin committees do

⁵⁸ *Id.* at 1441.

⁵⁹ See, e.g., COLUMBIA BASIN INTER-AGENCY COMMITTEE, PLAN FOR DEVELOPMENT OF NATURAL RESOURCES OF THE PACIFIC NORTHWEST (1952).

⁶⁰ See IRVING K. FOX AND ISABEL PICKEN, THE UPSTREAM-DOWNSTREAM FLOOD CONTROL CONTROVERSY IN THE ARKANSAS-WHITE-RED BASINS SURVEY (to be published).

⁶¹ 1 COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 57, at 74 (1955).

⁶² See FOX AND PICKEN, *op. cit. supra* note 60, at 113.

⁶³ See RIDGEWAY, *op. cit. supra* note 26, at 312.

provide a much-needed mechanism for federal-state cooperation in regional water developments. Their future success, however, will depend upon other changes in state and federal policies which need to take place before a good working environment is achieved.

III

STRENGTHENING THE ROLE OF THE STATES

Since 1950, five federally-created commissions have studied various aspects of federal-state relationships in water resources development—namely, the President's Water Resources Policy Commission (1950), the Missouri Basin Survey Commission (1953), the Commission on Organization of the Executive Branch of the Government (1955), the Commission on Intergovernmental Relations (1955), and the Presidential Advisory Committee on Water Resources Policy (1955). In addition, there has been state sponsorship of studies by the Council of State Governments.⁶⁴ Although the investigations of these bodies vary widely in purpose and philosophy, a number of conclusions can be drawn concerning desirable trends.

Without exception, all of the above-named commissions recommended that the role of the states in water resources development should be strengthened. As the President's Water Resources Policy Commission stated, the states perform functions which "are indispensable to full development of water resources and realization of benefits from them."⁶⁵ It was generally recognized that a river may come under both federal and state jurisdiction during the course of its flow and be subject to various types of appropriation, all of which calls for programs involving a high degree of coordinated planning and operation. Both the Commission on Intergovernmental Relations and the Presidential Advisory Committee placed a high premium on maintaining a vigorous federal system, the latter Committee commenting that⁶⁶

complete Federal assumption of responsibility [for the development of the nation's water resources] . . . would destroy the effectiveness of the government of the States and . . . work a profound and undesirable change in our traditional plan of government.

The Commission on Organization of the Executive Branch of the Government, perhaps the most outspoken on the states' rights issue, flatly recommended that whenever possible water resources developments "should be discharged by state or local governments . . . or by private enterprise."⁶⁷

The commissions were also in general agreement that federal-state water resources

⁶⁴ At the request of the Missouri Basin States Committee, the Council of State Governments, in 1952, drafted a somewhat unique federal-interstate compact for the Missouri basin. The Council has assisted a number of other states in the negotiation of interstate compacts and has often been the spokesman for the state position.

⁶⁵ 1 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 4, at 49.

⁶⁶ PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, *op. cit. supra* note 23, at 2-3.

⁶⁷ 1 U.S. COMM'N ON THE ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 57, at 36.

relationships should be organized and coordinated around the river basin. Indeed, this was the major theme of both the President's Water Resources Policy Commission and the Missouri Basin Survey Commission reports. Both commissions found that federal and state agencies pursued a functional approach to water resources development that thwarted good intergovernmental relationships in basin development, and both maintained that our system of federalism would be strengthened by the adoption of the basin concept. The Presidential Advisory Committee, however, warned that though basin development of water resources was generally sound, "in some instances consideration of water resources development should be viewed from the standpoint of a region rather than solely from that of a river basin."⁶⁸

The other major area in which the findings of the federal commissions were in substantial agreement concerned the adverse impact that competing federal policies and administrative organization have had upon effective state participation. The Presidential Advisory Committee stated that "the fact that the Federal interest in water resources development has been expressed in different laws empowering differing agencies to pursue particular programs for particular purposes" is the greatest single weakness in the lack of administrative coordination between the federal government and the states.⁶⁹ All of the commissions recommended that the federal government needed to strengthen its own administrative household in order to work effectively with the states.

Beyond these general areas of agreement, the commissions, primarily federally-oriented, varied widely in specific proposals for strengthening the position of the states in water resources development. The only commission specifically charged with studying the role of the states was the Commission on Intergovernmental Relations, and in the water field, its analysis was not too extended. There has been no recent governmental or quasi-public study which has examined the whole field of water policy from the standpoint of the states. Were an objective study undertaken, it is likely that the following courses of action would be proposed:

A. Administrative Reorganization

A majority of the states desperately need to overhaul their administrative structure for water resources development if they expect to keep pace with federal programs. The State of California, for example, with all of its tremendous water developments, hobbled along until recently with administration of natural resources sprawled over four major departments, ten independent agencies, and forty boards and commissions.⁷⁰ With this kind of divided organization, it is impossible to achieve an integrated state water program. Good reorganization does not necessarily mean that all state water agencies need to be consolidated into one department. It does require, however, an administrative structure that will give coherence to state policies

⁶⁸ PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, *op. cit. supra* note 23, at 3-4.

⁶⁹ *Id.* at 2.

⁷⁰ A new Department of Water Resources was created in 1956, although the reorganization of water agencies is not yet fully accomplished.

and programs and which will foster coordination around watershed and drainage basins.

Moreover, reorganization of state water agencies must be related to other natural resources functions. Good state programs for drainage basins cannot be developed unless land planning, forestry, recreational, and wildlife activities are intermeshed. The establishment of natural resources coordinating boards at the state level, such as the President's Water Resources Policy Commission has suggested, is not enough unless the boards have legislative and executive powers to formulate and review programs.⁷¹ Experience has shown that agencies with vested program interests and strong clientele support are not easily persuaded by an advisory body to change their basic policies. Shifting the pattern of state resources operations from a functional to a drainage-basin approach needs approval of both legislative and executive branches. State integration of resources agencies will facilitate better working relationships with the federal government and promote more wholesome political support within the state for balanced resources programs.

B. Policy Formulation and Planning

The states need to give more attention to the formulation of water resources policies and plans, both on an intrastate and intergovernmental basis. Most of the states do not have an adequate water research or planning staff. Little long-range planning is being done. The states are in a weak position to cooperate with the federal government on this front.

There have been a number of proposals to improve state water planning. One of the more prominent is that states should re-establish state planning commissions charged with the responsibility of the long-range physical developments of the state. If a planning commission is not created, the Presidential Advisory Committee has suggested that a minimum step would be the employment of a moderate staff to participate on a continuing basis "at all stages of water resources planning."⁷² Such a staff would go a long way toward integrating the research activities of various state agencies and relating them to federal research programs. Another improvement would be the institution of a water resources budget that would reflect both immediate and long-term expenditures and which would present an over-all picture of the state's program. Effective budget preparation fosters public understanding and wise legislative action. Finally, good planning could be fostered by better legislative review of administrative programs. In this connection, it has been suggested that the establishment of a joint committee in the legislature to consider resources programs would result in better policy formulation.⁷³

If the states improve planning at the state level, they will then be able to participate more effectively in interstate basin planning. The states should participate in the

⁷¹ 1 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 4, at 51.

⁷² PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, *op. cit. supra* note 23, at 15.

⁷³ See LAURENCE L. DURISCH AND HERSHALL L. MACON, *UPON ITS OWN RESOURCES* 121 (1951).

initiation of regional programs not simply for the purpose of protecting state interests, but to harmonize state plans with federal and other state developments. Provisions should be inserted in appropriate federal statutes requiring federal agencies to formulate basin-wide programs in conjunction with the states. Future legislation might be patterned after the Water Pollution Control Act of 1948 and the Watershed Protection Act of 1954,⁷⁴ which provide for a greater degree of federal-state participation in the formulation of programs than has heretofore existed. The Council of State Governments might also be more effectively used as an instrument by the states to promote interstate cooperation in water resources planning.

C. State Review of Federal Programs

The states' position in water resources development would be immeasurably strengthened if all federal water resources agencies were required to submit proposed project plans to each of the affected states for official review. The Flood Control Act of 1944 requires the Chief of Engineers and the Secretary of the Interior to follow this procedure, and the Department of Agriculture, by administrative ruling, has now adopted the same practice.⁷⁵ The states are usually given sixty to ninety days to prepare official comments, which are transmitted to Congress attached to the project reports.

All of the recent commissions which have studied the provisions for state review of federal projects have recommended that this requirement be applied to other federal agencies. However, this procedure has not been wholly successful. The time allotted for review has not always given the states adequate time to study the proposals carefully.⁷⁶ Furthermore, neither federal agencies nor Congress have attached sufficient importance to state comments. A remedy would be to adopt the principle set forth in the Watershed Protection Act of 1954 which requires state approval before federal aid can be granted or projects constructed.⁷⁷ But to apply this procedure to all interstate projects would be unwise, since individual states with minor interests at stake could hold up developments indefinitely. A more desirable policy might call for interagency basin committee consideration of state comments with the purpose of reconciling, wherever possible, federal-state conflicts.⁷⁸ Careful examination of the state positions by the United States Bureau of the Budget would also be desirable.

D. Joint Federal-State Financing

Previous paragraphs have pointed out that the states have not been sufficiently resourceful in organizing their financial means to participate in large water resources development projects. The position of the states to criticize and propose alternatives to federal projects would be immeasurably strengthened if they assumed a bigger

⁷⁴ 68 STAT. 666, as amended, 16 U.S.C. §§1001-07 (Supp. III, 1956).

⁷⁵ See MISSOURI BASIN SURVEY COMM'N, *op. cit. supra* note 37, at 250.

⁷⁶ See PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, *op. cit. supra* note 23, at 14.

⁷⁷ See COMM'N ON INTERGOVERNMENTAL RELATIONS, NATURAL RESOURCES AND CONSERVATION 9 (1955).

⁷⁸ See PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, *op. cit. supra* note 23, at 17.

share of the financing. Federal agencies, anxious to have no delay or formidable obstacles to their plans, have likewise been at fault for not supporting vigorously the principle of greater state financial participation.

The recent commission studies were unanimous in recommending that the states and local governments and private beneficiaries should bear a greater portion of the cost of water resources development. In general, the commissions favored clearer determinations of national and local benefits, with the states and private beneficiaries assuming costs attributable to the latter. Although official reports have not been too explicit, what specific steps might the states take? First of all, the adoption of better budget planning would provide a better picture of state resources which could be allocated to water resources development. More adequate fiscal planning might also enable the states to work out long-term arrangements for project financing. The states could recapture some of the water project costs by levies upon identifiable beneficiaries. The federal government, in turn, could use matching grants and grants-in-aid with more ingenuity to induce state financial participation. The costs of programs could be worked out jointly by the federal government and the states well in advance of construction schedules and the states obligated to finance their portion of the costs on the basis of pre-agreed time schedules. This would give the states and local governments a longer opportunity to raise revenues and plan for necessary fiscal adjustments.

E. Joint Federal-State Management

The extent to which the states could construct and operate water resources projects jointly with the federal government or take over the operation and maintenance of projects established by the federal government have not been fully explored. Whether the public welfare would always be served by more state operation is debatable, in view of the special interests of groups in many states that are pressuring for state control of projects now under federal jurisdiction. Yet, this is an issue that will be raised with increasing frequency as the federal government multiplies its efforts in the water resources field and the pressures for decentralization become greater. The Presidential Advisory Committee recommended that "operation of water resources projects be turned over to non-Federal interests as soon as possible in all cases where this is practicable," but it did not spell out the standards that should be maintained in various kinds of projects before federal ownership or responsibilities would be relinquished.⁷⁹

Obviously, the majority of states do not contemplate operation of large multipurpose development projects, particularly those which are interstate. The states, however, could assume greater responsibility for the operation of smaller developments or manage specific projects in a basin-wide system under basic federal statutes. It would appear that a system of operation such as this may be evolving in California. Legislation with bipartisan support has recently been introduced in both houses of

⁷⁹ *Id.* at 34.

Congress which would authorize the Secretary of the Interior to enter into an agreement with the State of California to construct and operate the San Luis unit, a major multiple-purpose project of the Central Valley Project.⁸⁰ Under the bill, the project would be tied into both the federal and state water resources development plans, both units of government would share costs of construction and maintenance, and both would manage portions of the facilities. Although a great number of administrative arrangements would have to be worked out if the plan went into effect, this legislation heralds a new stage in federal-state cooperation.

Both the nation and the states have much to gain from encouraging states to share in the operation of water resources projects with the federal government, even though present federal policies in such fields as irrigation and power distribution prevail. To participate effectively, most of the states would be forced to make some desirable improvements in their administrative structure and operating standards.

State and local financial contributions to projects would probably increase. State operation could foster greater local participation and a better adaptation of operating conditions to local circumstances might result.

F. Intergovernmental Administrative Arrangements

Increasingly complex water resources developments will call for closer intergovernmental relationships for basin planning. Not only should existing administrative instruments, such as the interstate compact and the interagency basin committee, be improved, but new and varied arrangements should be devised. The interstate compact is a slow and cumbersome process for developing a basin, but it can be a useful means for achieving understanding among units of government. It needs to be employed as an instrument to promote administrative agreement rather than to magnify differences. It is noteworthy that the governors of California and Oregon have recently signed a compact designed to promote the comprehensive development of the Klamath River basin through administrative cooperation, without lengthy litigation.⁸¹ More consideration should also be given to compacts in which the federal government participates with the states in drafting the provisions.

Despite shortcomings, the interagency basin committees offer a framework for fostering further federal-state cooperation. It is to the states' advantage to have them created for all major basins. The committees should be strengthened both from the standpoint of federal agency coordination and state representation. Following the recommendations of the President's Water Resources Policy Commission, they should be given legislative status, a presidentially appointed chairman, and responsibilities for basin-wide planning.⁸² To bring the states into membership as genuine participants presents some difficult questions of voting rights, particularly if the committees are given formal powers of coordination and clearance; but this can be

⁸⁰ S. 1887, 85th Cong., 1st Sess. (1957); H.R. 6035, H.R. 7295, 85th Cong., 1st Sess. (1957).

⁸¹ See Sacramento Bee, April 18, 1957, p. E-1. For terms of the compact, see California Senate Bill 1991 (1957).

⁸² I PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 4, at 49.

worked out if problems are recognized as having different orders of magnitude for which a single voting formula on all matters is not desirable.

As another possible form of intergovernmental cooperation, consideration should also be given to the possibility of establishing mixed-ownership corporations which would promote and finance improvements, both public and private. The form of the corporation might be patterned along the lines of the Federal Farm Credit and Land Bank organization. The federal government might provide initial working funds but permit state and local governments and accredited private groups to subscribe capital and participate in the management of the corporation through regional or state water resources banks. Projects could be undertaken which might be partially or wholly financed by corporation funds and vary in size from small local improvements to fairly extensive drainage basin programs. Obviously, the establishment of semi-independent corporations raises many implications for state and federal policies and programs. Corporation projects would undoubtedly have to be reviewed to make sure that they did not conflict with established plans for basin development. Nevertheless, this may be a fruitful way of encouraging local initiative as well as facilitating some wholesome decentralization in basin programs.

In conclusion, let it be noted that no basic changes in federal or state powers are necessary to institute the reforms that have been proposed here. Our federal system is adequate, provided that we build wisely upon the existing pattern of intergovernmental relationships. What is sorely needed is public recognition and support for a comprehensive program of water resources development, and legislative and administrative ingenuity in devising the best policies and implementing arrangements for each basin. The information with which to proceed is not lacking. The nation has now had the benefits of a number of major studies and investigations to guide the courses of action. It is high time that both the federal government and the states take steps to carry out the proposals.

THE TENNESSEE VALLEY AUTHORITY: A STUDY OF FEDERAL CONTROL

ROSCOE C. MARTIN*

I

INTRODUCTION

High in the Blue Ridge Mountains rise the farthest headwaters of the Tennessee River. Virginia contributes the Holston, North Carolina the French Broad; and the two join to form the Tennessee five miles above Knoxville. Downstream thirty miles the Little Tennessee, from the heart of the Great Smokies, joins the river, and twenty miles farther down, the Clinch. Picking up volume from a number of lesser tributaries (the Hiwassee chief among them), the Tennessee pursues a southwesterly course to Chattanooga, thence generally westerly in an erratic crossing of north Alabama to the northwestern corner of that state, thence northerly to join the Ohio at Paducah, Kentucky. From its remotest origin to its junction with the Ohio is a distance of somewhat more than 800 miles. The Tennessee may not be said to be a great river, as great rivers go; but it is fourth among the rivers of the United States in volume of water carried.

In its winding course, the river system drains parts of seven states—Alabama, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, and Virginia. The drainage basin includes 125 counties with an area of almost 41,000 square miles—very close to that of the state of Tennessee.¹ The watershed's 1950 population was approximately 3,544,500. Average annual rainfall for the Valley is fifty-two inches. Elevation varies from 6,500 feet in the eastern mountains to 300 feet at Paducah. The traditional occupation of the area has been agriculture, which continues to dominate the economic scene, notwithstanding significant changes during the last twenty years. The Valley, with its small-farm, rural economy, has long been considered to be economically underdeveloped; and there is much evidence even yet to justify this characterization, though the statistics are much less compelling now than they were a quarter of a century ago.

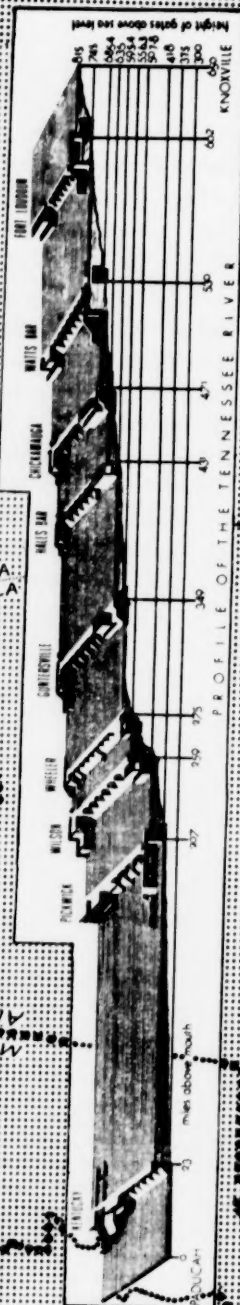
The Tennessee River made its influence felt as a rude artery of commerce as early

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¹ An alternative concept sometimes employed identifies the "region" as the Tennessee River watershed plus the considerable additional area served by the distributors of TVA power. So defined, the region includes 201 counties, has an area of 92,000 square miles, and had a 1950 population of nearly 6,000,000.

[illegible]

The Tennessee River Basin is shown in white. The dotted line encloses the area served with TVA power.



as 1800. The frontiersmen, making their way west with their families through the mountain passes, followed the streams down into the great valley of eastern Tennessee. Finding there reasonably quiet water, they loaded their possessions on flatboats and took to the river. Poling downstream, if slow, was sure and safe enough for more than 300 miles after leaving Knoxville. There were shallows and shoals and bars, to be sure, but good rivermen could negotiate these without undue difficulty. Toward the western end of the Alabama reach of the river, a serious barrier to navigation appeared; for there, at Muscle Shoals, the river dropped 100 feet in a matter of twenty miles. Below the Shoals was another stretch of almost 300 miles of relatively quiet water, and there the frontiersmen resumed their westward travel. The interruption to river transportation occasioned by the Shoals almost guaranteed that, sooner or later, the Tennessee River would become the object of special attention.

The time came in 1824, when the Supreme Court, in *Gibbons v. Ogden*,² proclaimed the responsibility of the federal government in the field of navigation. Later in the same year, Congress passed the first internal improvement act, which included a grant to the state of Alabama of 400,000 acres of land to assist that state in making certain improvements at Muscle Shoals in furtherance of navigation on the Tennessee. During the next seventy-five years, a number of locks and canals were constructed up and down the river. These structures, which were limited in purpose to the improvement of navigation, were built by the several states, usually with federal aid in the form of land grants.

Throughout this period, the Muscle Shoals were regarded as nothing more than an obstruction to river traffic, and therefore as an unmitigated evil. Toward the end of the century, however, opinion changed sharply; for the value of the Shoals as a hydroelectric site came to be realized, thus adding a second dimension to the problem of river development. The first franchise for the private development of Muscle Shoals for electric power was granted by Congress in 1899 to the Muscle Shoals Power Corporation. Nothing came of this grant, nor did anything significant come of two or three other measures passed during the next fifteen years (one of which provided the occasion for President Theodore Roosevelt's historic veto).

World War I added yet a third dimension to the problem, precipitating as it did the building of two nitrate manufacturing plants at Muscle Shoals. These plants were justified under both wartime and peacetime needs, for they were equally adaptable to the manufacture of munitions and fertilizer. Neither plant was finished in time for the production of munitions, and one, indeed, employed a process of doubtful effectiveness. There the plants stood at the end of the war, for all that. There stood also an unfinished dam, begun to supply electric power to run the nitrate plants and perhaps two-thirds completed at the end of the war. Essentially these were the "Muscle Shoals properties" held by the federal government at the end of the war, although there were a number of secondary facilities as well. The Government's total investment was upward of \$100,000,000.

² 22 U. S. (9 Wheat.) 1 (1824).

The fifteen years following 1918 witnessed an almost continuous running battle over the disposition of the Government's holdings at Muscle Shoals. There was an interesting series of offers by a variety of private interests to purchase or lease the properties (or some of them) and to operate them as business enterprises. Among those making offers (there were not less than a dozen in all) were Henry Ford, the Alabama Power Company, a combine of southeastern power companies, and the Farmers' Federated Fertilizer Corporation. Several proposals were given serious consideration, and more than one came close to acceptance, but none was able to master sufficient strength to gain approval in the showdown.

Meanwhile, those who favored public development of the site were neither silent nor inactive, and a series of bills was introduced looking to completion and subsequent operation of the Muscle Shoals projects by the federal government. Senator George Norris, of Nebraska, was the principal spokesman for public development; on the one hand, he spoke out vigorously against the several private sale/lease bills, while on the other, he introduced and fought with equal vigor for adoption of a succession of measures calling for development by the Government. Bills introduced by Senator Norris in 1922, 1924, 1926, and 1927 failed of passage. A fifth bill, likewise introduced by Senator Norris, received congressional approval in 1928, only to be pocket-vetoed by President Coolidge. A sixth bill, approved by Congress in 1930, was vetoed by President Hoover. Yet a seventh, again a Norris bill, was introduced in 1931; like the first four it failed of passage.³

At very long last, a combination of circumstances occurred which created a climate favorable to adoption of a public development measure. The principal elements which entered into the combination were the depression of the early thirties, the depressed state of the Tennessee Valley, the continued support of Senator Norris, the leadership of President Roosevelt, and the state of mind of both the country and the organs of government, including principally and specifically the Congress. In the spring of 1933, President Roosevelt recommended to Congress action looking to the public development of the Muscle Shoals site. Senator George Norris and Representative (now Senator) Lister Hill joined in support of a measure which Congress accepted, and on May 18, 1933, the Tennessee Valley Authority Act became law.⁴

The Act did not equivocate. On the contrary, adopting forthrightly the principle of public development, ownership, and operation, it set forth in bold language the essentials of a valley development program. It spoke in specific terms of the needs for flood control on the Tennessee River and its tributaries, for public support for and stimulation of navigation on the river, and for the extensive development of public power in the region; and it contained wide and sweeping authorizations to those ends. But these enterprises looked primarily to the physical development of the Valley, and the Act was not satisfied with that; for it contemplated a broad program

³ This sketch of congressional interest in Muscle Shoals is summarized from Swidler, *Legal Foundations*, in *TVA: THE FIRST TWENTY YEARS* 16-34 (Martin ed. 1956).

⁴ 48 STAT. 58 (1933), 16 U. S. C. §831 (1952).

of social and economic development as well. It spoke further, therefore, of "... the proper use, conservation, and development of the natural resources of the Tennessee River drainage basin . . .," of the production and sale of cheap fertilizer, of reforestation, of activities designed to encourage the proper use of marginal lands. In short, the measure contemplated a varied program of public action designed to improve "... the economic and social well-being of the people living in the river basin." The TVA Act patently approached the problem of river valley development in a bold, purposeful, and imaginative way. One who would understand the subsequent history, and more particularly the program, of the TVA would do well to begin by reading the original Act of 1933.

It may be noted that the 1933 Act has been amended a number of times, although never in a way which has modified in any important respect the concept of the TVA originally set forth. The most important of these amendments were passed in 1935, 1939, 1940, and 1948, although there were others.

It became apparent soon after its passage that the TVA Act would not be allowed to stand without challenge. The *Ashwander* case,⁵ which was decided in 1934, became the vehicle for one of the two major court drives against the TVA. In this case a number of holders of preferred stock in the Alabama Power Company brought suit against the TVA on the ground that the federal government was engaged in setting up a power empire under the guise of a navigation and flood-control program; that such action was contrary to the interests of the stockholders of the Alabama Power Company; and that, since that company had not acted to protect its stockholders, the stockholders themselves had the right to enter suit in protection of their interests. The United States district court in Birmingham ruled for the complainants, upholding their right to sue and sustaining their contention regarding the TVA's power program as exemplified in the Wilson Dam operation. Without going into the legal niceties of the points involved, it is sufficient to note that the district court was reversed by the Circuit Court of Appeals, which in turn was sustained by the United States Supreme Court. The judgment of the Court was explicit as to the power produced at Wilson Dam, holding that the TVA could market such power in any way justified by its total program. It did not pass on the legality of the TVA power program in general, which thereupon became the object of a separate attack.

In the *Tennessee Electric Power Company* case,⁶ eighteen companies joined in a frontal attack on the whole power program. The district court decided all issues of fact in favor of the TVA, holding that the production of hydroelectric power was directly related to navigation and flood control; that the power program was operated with primary concern for navigation and flood control, as directed by the Act; and that the production and sale of power was in harmony with the constitutional provisions concerning property, commerce, and national defense. The Supreme Court

⁵ *Ashwander v. Tennessee Valley Authority*, 8 F. Supp. 893 (N. D. Ala. 1934), *rev'd*, 78 F. 2d 578 (5th Cir. 1935), *aff'd*, 297 U. S. 288 (1936).

⁶ *Tennessee Electric Power Co. v. Tennessee Valley Authority*, 21 F. Supp. 947 (E. D. Tenn. 1938), *aff'd*, 306 U. S. 118 (1939).

upheld the lower court on appeal, although on the ground that the complainants had no legal standing to sue rather than on the merits of the case. Even so, this action stands as the ruling case on the subject, perhaps strengthened by the fact that the trial court and the Supreme Court rested their decisions on different considerations.

The *Tennessee Electric* case represented the last important legal action brought against the TVA in terms of the scope and legality of its programs. It is interesting to note that the principal challenges to the agency arose from its power program. Other decisions since have confirmed the right of the federal government to undertake a variety of activities relating to navigation and flood control and to subsidiary operations. The legal right of the government to enter upon a general program of river basin development appears, therefore, to have become well established in the last quarter-century.

II

ORGANIZATION

In terms of organization the TVA is characterized by several outstanding features, of which two require mention at this point. In the first place, the TVA enjoys substantial organizational independence. It stands apart from other federal agencies; it has only such relations with other departments and agencies as its Board of Directors may authorize or agree to; and it reports to the President and the Congress direct. Further, the TVA enjoys certain privileges by virtue of its status as a government corporation. It possesses a flexibility not normally granted a department, in the matter, for example, of procedure in obtaining authorization for construction of new projects. It manages its personnel with only limited supervision by the Civil Service Commission. It receives a lump sum appropriation, and so, notwithstanding the existence of the usual fiscal controls (seen, for instance, in the constant scrutiny exercised by the Bureau of the Budget), enjoys greater freedom with respect to expenditures than do most federal agencies. It also controls its own revenues to an unusual degree. It may acquire and dispose of property in accordance with the requirements of its program. It has its own legal counsel, and it can sue and be sued, as any other corporation. In short, as a government corporation, the TVA enjoys a special status which gives it greater operational freedom than is enjoyed by the normal department or agency. The effect which this individual status has (or may have) on the total administrative structure of the Government is an important problem, which, however, is not appropriate for examination here.

In the second place, the TVA provides an example of the decentralized administration of an undertaking which, when all is said and done, remains a federal program. The TVA Act states specifically that "The Corporation shall maintain its principal office in the immediate vicinity of Muscle Shoals, Alabama."⁷ There are those who insist that maintenance of the central office in Knoxville, Tennessee, some 350 miles up the river from Muscle Shoals, hardly meets this requirement, but it is

⁷ 48 STAT. 63 (1933), 16 U. S. C. § 831g (1952).

not necessary to get into that argument. For present purposes, the central point concerns not location in this or that city, but location in the region. The TVA is not directed from Washington, but from a city central to the region, and secondarily from a number of other valley cities where special staffs reside. The members of the board of directors, the general manager, and all administrative officials and employees (save only a very small liaison group located in Washington) live in the region. The principal policy officers travel extensively throughout the watershed and know its problems from firsthand observation. It is a point deserving of emphasis that the TVA's major decisions are made in the region by men who know the river basin intimately of personal acquaintance.

The basic elements in the TVA's administrative organization can be seen from the accompanying chart. The board of directors consists of three individuals appointed by the President, "by and with the advice and consent of the Senate," for nine-year (overlapping) terms.⁸ The Act sets forth the powers and duties of the board in some detail, but its whole intent is summarized in the following simple statement: "The board shall direct the exercise of all the powers of the Corporation."⁹ As a point of special interest, the same section provides that "All members of the board shall be persons who profess belief in the feasibility and wisdom of this Act."¹⁰

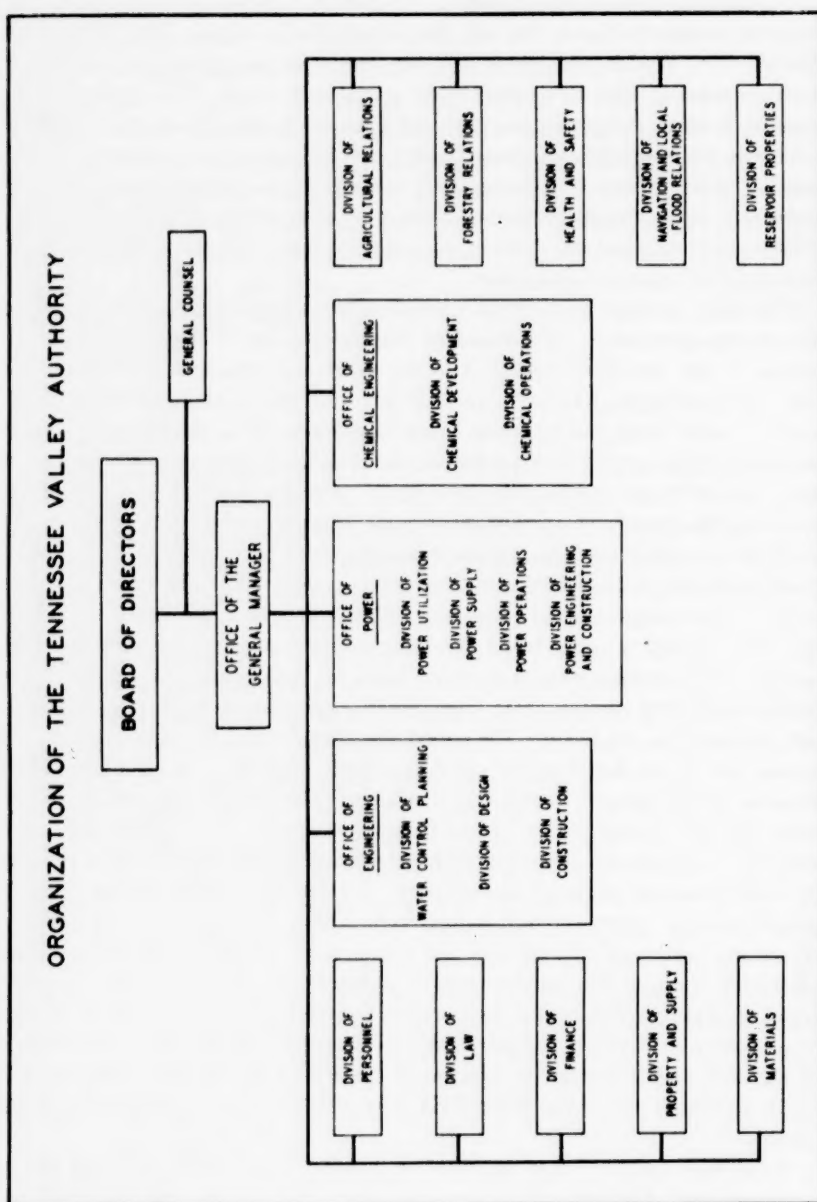
If this were the place to go into the experience of the board of directors, its history would be found to be divided into three major periods. The first four years were a time of experimentation and adjustment. They witnessed a shift in board thinking and practice from a policy board consisting of three co-equal and virtually independent administrators without a central focus for management to a policy board without individual administrative responsibilities operating through a general manager appointed by the board. The period was characterized by increasing personal tension within the board which came to a head with the removal by President Roosevelt of the minority member of that body. The second stage, which may be called "the era of good feeling," lasted for seventeen years. During this time, there were no critical personal differences within the board, which concentrated its energies on major problems of policy and program. During this period, too, the office of general manager came into full flower, with cordial relations prevailing between the several holders of that position and the members of the board, and with the office itself enjoying the complete support of the board. The third period, which began in 1954, has witnessed a deterioration in relations within the board, in relations between the board (more particularly its chairman) and the staff, in the morale of the staff, and indeed in the position of the agency as a whole. This last is a highly significant part of the whole TVA story, but it is more appropriate for telling elsewhere.

It has been suggested that the board of directors is the TVA's principal policy-making body. This has indeed been its historic role. In its "exercise of all the

⁸ 48 STAT. 59 (1933), 16 U. S. C. §831a (1952).

⁹ *Ibid.*

¹⁰ *Ibid.*



powers of the Corporation," it establishes general policies, determines program directions and emphases, prescribes the basic organizational structure, reviews reports and evaluates results, approves the annual budget, and assumes primary responsibility for external relations, including specifically those with Washington. The board, and until recently each of its individual members, long ago foreswore the operational activities which brought it to grief in its early years.

The general manager is appointed without term by the board of directors. On the one hand, he serves the board both as representative and as spokesman vis-à-vis staff and program activities. Following a decision by the board, the general manager proceeds with its effectuation: he confers with the officials involved, composes any differences that may appear, and arrives at agreement regarding responsibility for administration. He also serves as continuing adviser to the board and is, of course, available to that body for special assignments. On the other hand, he is the principal staff representative and spokesman in relation to the board. In the latter capacity, he receives staff proposals regarding program, negotiates agreement on differences, and makes recommendations to the board. He occupies an island squarely in the middle of a busy two-way street, and he is responsible for the direction of traffic both downward from the board of directors and upward from the staff. In the discharge of his heavy responsibilities, the general manager does not, of course, stand alone. On the contrary, he has the active and continuing staff assistance of the divisions of personnel, law, finance, and property and supply, and of the budget, information, and government relations and economics staffs as well.

The proof of TVA achievement is, of course, to be found not in its administrative arrangements, but in the scope and effectiveness of its program activities. The chart suggests the nature of the substantive programs, by name at least. An analysis of these programs will be undertaken later; they are mentioned here only to indicate their significance and their place in the organizational structure.

The distinguishing features of the TVA's system of administration are perhaps three. All relate to spirit and method rather than to form. First, administration is highly informal, not to say even personal. There are few proprieties to be observed. There is no discernible resentment against "level-skipping"; consequently there is small homage paid to the chain-of-command concept. If a member of the board wants a piece of financial information, he is likely to walk around to the office of the budget director and ask for it or to call that individual on the telephone and ask him to bring it in. If the director of personnel wishes to take a matter up directly with a member of the board, he does so, although normally he will notify the general manager (or drop back by his office and talk the matter over with him in person) as a matter of courtesy. There is, in short, the freest kind of give-and-take among all top TVA officials.

Second, it follows almost of necessity that the TVA's system of administration is quite flexible. There are very few hard-and-fast procedural rules, although there is, of course, general awareness of the incidence of responsibility and of the resting

place of final authority. The Act of 1933 vested all authority in the board of directors, which has chosen to establish a fluid, easy-going organization for the discharge of its duties. In the resulting administrative atmosphere, the office of general manager is an extraordinarily interesting one, since that official operates almost entirely through prestige and persuasion rather than through authority or power. This is more generally true of administrative officers, particularly in large organizations, than is commonly supposed; yet, these observations seem especially appropriate in relation to the office of general manager of the TVA.

From these considerations it follows finally that the TVA's system of administration is unusually democratic in its operation. There is a very active system of interoffice communication, and few decisions are made without full and free consultation—a memorandum proposing a certain course of action will sometimes carry as many as a dozen sets of initials, indicating that all interested parties have been apprised of the proposal and have had opportunity to comment. There are almost no imperatives in the form of orders; instead, administration is largely by consensus. TVA administrators like to think in terms of "the sovereignty of the fact." This will have a familiar ring for those acquainted in non-TVA circles; yet it does seem that the TVA has succeeded in minimizing administrative whim and at the same time in humanizing its administrative processes to an unusual degree.

III

PROGRAM

An analysis of the TVA program must begin with an examination of several underlying concepts. These may be considered to be four in number. First, all program activities find their root, directly or by clear implication, in the Act of 1933, which, as has been noted, called for the comprehensive development of the river basin. Second, the Act conceived the TVA to be a regional agency. It did not bound the region with definite limits, but extended the jurisdiction of the new agency to the watershed of the Tennessee River and its tributaries. Third, the Act posited natural resources as the TVA's central concern, both by specific employment of the term and by emphasis on resource-based activities. The TVA emerges from the Act of 1933, then, as a regional agency charged with the comprehensive development of the natural resources of the Tennessee Valley. Fourth and finally, the Act specifically provided for the multiple-purpose development of the river. There had been many significant single-purpose river programs before 1933; there had even been some single-purpose programs which had yielded substantial secondary benefits. But there had never been a program for the total development of a river valley which took account, from the beginning, of all important developmental possibilities and geared all promising programs to a comprehensive plan for river improvement and use. The TVA Act, in providing for such a program, parted company with tradition; for a scheme for the integrated development of a river system which finds almost universal acceptance in 1957 was viewed with equal measures of skepticism and scorn in 1933.

There is, in fact, nothing either magical or mysterious in the multiple-purpose formula. The Act provided, first, that the river be brought under control. As a companion purpose, it designated navigation. Third, and only after the requirements of flood control and navigation should have been met, it named as a purpose the production and sale of electric power. From the vantage point of more than twenty years of TVA experience it is clear that, while no one of these purposes can be served to full advantage if recognition is taken of the other two, the requirements of all three can be reconciled in substantial degree if the needs of each purpose are considered in the light of the needs of all and so harmonized at the planning stage in one over-all multiple-purpose program. Moreover, these principal pillars of the TVA program by no means exhaust the possibilities of multiple-purpose development; for a number of resource-based programs, reforestation and the improvement of agricultural practices prominent among them, can be incorporated into a comprehensive development program without serious strain. So also can such by-product, but by no means unimportant, activities as the promotion of recreation and the improvement of health. In short, a multiple-purpose program can be wrought to include a considerable number and variety of individual programs. This is what the Act of 1933 contemplated. It is our purpose to examine the manner in which the intent of the Act has been translated into action.

The TVA system of river control rests upon a series of thirty dams, nine of which are on the main stem of the Tennessee, twenty-one of which are on tributary streams.¹¹ Of these, the United States Government built one, Wilson, in pre-TVA days; private business built nine and either sold them to the TVA or contracted for their operation by that agency; and the TVA itself constructed twenty. The first of the TVA-built dams, Norris, was begun within a few months of the passage of the TVA Act; the last, Ft. Patrick Henry, was completed almost exactly twenty years later. All dams are operated in accordance with these principles: (1) the reservoirs are maintained at levels which will provide adequate storage of flood waters when such storage is needed; (2) water is released in quantities necessary to maintain the required minimum depth for navigation; and (3) within the limits set by the requirements of flood control and navigation, the stored water is used for the generation of hydroelectric power. Each dam is administered in harmony with all the rest, so that integrated management of all the waters of the river basin is achieved. The principle employed is that of the "single river master," which brings highly variable and erratic runoffs under unified control.

So effective has the flood control system proved that there has been no serious damage from flood since the dams were completed. The fifth, sixth, and seventh highest floods of record would have occurred, without regulation of the river, in 1946, 1947, and 1948; with the system of control in effect, the flood waters were contained without grave damage. Nor is the benefit from flood control confined to

¹¹ In addition, the TVA owns and operates one dam in the Cumberland basin and buys the power produced by the three "Army Engineer" dams located there through the Southeastern Power Administration.

the Valley of the Tennessee; for that river's flood crests have been substantially lowered at Paducah, thus appreciably reducing the flood menace on the lower Ohio and the Mississippi. This is not to say that the danger of flood on the Tennessee River has been eliminated, but only that the TVA's river control system is adequate to contain, without serious damage, any flood of which there is record. The construction of levees around the city of Chattanooga would reduce substantially the remaining threat of damage from flood on the Tennessee; but that has been held to be a local matter, one in which Chattanooga has not concerned itself with vigor thus far.

With reference to the big dam-little dam controversy, it should be noted that the TVA, while perhaps the country's leading exemplar of big dams, does not advocate that method to the exclusion of upstream control. On the contrary, throughout its life the TVA has had an active concern for tributary watersheds, and has initiated and participated in a number of programs designed to control ground water runoff through reforestation, other forms of erosion control, and better farm management.

The Act of 1933 directed the TVA to construct and maintain facilities which would ensure a nine-foot navigation channel from Knoxville to the mouth of the Tennessee. This has been achieved through the inclusion of locks in the nine main-stream dams, which create a chain of slack-water reservoirs with the head of each reservoir resting on the foot of the dam next upstream.¹² The channel required by the Act totals 630 miles in length. In addition, nearly 300 miles of subsidiary channels, more than one-third of them with a minimum depth of nine feet, have been developed in the lower reaches of the tributary rivers.

In 1933, there was little commerce on the Tennessee, and that little was confined chiefly to short hauls of bulk cargo of low value. The TVA's optimistic forecasts for the development of river traffic were met with cries of derision by many transportation experts; yet, subsequent developments proved the TVA estimates to have been on the modest side. Thus in 1940 the TVA made a comprehensive survey of potential river traffic on the Tennessee, on the basis of which it forecast a "matured traffic" of 7,000,000 tons of freight and 1.5 billion ton-miles of shipping, with savings in transportation costs of \$9,000,000, for 1960. In actual performance, the 1955 river traffic totalled almost 10,000,000 tons and 1.6 billion ton-miles, at a cost saving estimated at \$16,700,000.

In the early days, there was insufficient traffic to support well-equipped terminals; hence, few such terminals were to be found. To provide demonstrations, to meet growing and anticipated needs, and to make river transportation effectively available in the war effort, the TVA constructed and, for some years, operated four public-use terminals spaced along the river from Knoxville to Decatur, Alabama. Subsequently, as increased traffic warranted, it leased the terminals to private operators. Further,

¹² On July 2, 1956, construction began on a new lock at Wilson Dam. This lock, which will lift tows 100 feet in one operation, will be the highest single-lift lock in the world. It will reduce lockage time at "The Shoals" by 75%. TVA ANN. REP. 13-14 (1956). Most of the specific data hereafter cited for 1955 and 1956 rest on this report.

with the growth of commerce, private enterprise came actively into the field of construction and operation of terminals. Since 1933, it has been estimated, more than \$500,000 in private capital has been invested in some seventy-five terminals and servicing facilities along the river. The great bulk of this development has come within the last ten years. One of the by-products of the postwar prosperity has been a sizable expansion in inland waterway traffic. The Tennessee River has contributed measurably to this expansion, as the cities along its route have grown and as river commerce has increased to keep pace. In retrospect, the Act of 1933 appears prophetic.

The Act was explicit with regard to the production and sale of electric power, and amendments passed subsequently strengthened the TVA's hand in that area. The grant of authority was couched in very broad terms: assuming but in no wise limiting the TVA to the production of hydroelectric power, the agency was authorized to acquire and construct all facilities deemed necessary for the generation of an adequate power supply and to take measures to distribute the power produced throughout the region. In providing for the distribution of power, the TVA was instructed to¹³

. . . give preference to States, counties, municipalities, and cooperative organizations of citizens or farmers, not organized or doing business for profit, but primarily for the purpose of supplying electricity to its own citizens or members. . . .

Quite specifically, the new agency was directed to take care that "farms and small villages" were supplied with electric power. It is difficult to see how the power provisions of the Act could have been made any broader or more explicit.

Among the properties which the TVA acquired by transfer from the federal government were Wilson Dam, which had facilities for hydroelectric power generation, and two small steam electric plants in the vicinity of Muscle Shoals. It had the capacity, therefore, to produce power by both hydro and steam from the very beginning. Its early history, nevertheless, predisposed the agency toward hydroelectric production; for it was directed to bring the river under control at the earliest moment and to produce hydroelectric power in whatever amount might prove consonant with flood control and navigation. The TVA proceeded to build dams, first Norris, then Wheeler, then Pickwick and Hiwassee and Guntersville; and everywhere it installed turbines for the generation of hydroelectric power. The TVA thus grew early and naturally into a great hydroelectric enterprise.

But the production of electricity is, by nature, a monopoly, whether a private or a public monopoly is not material: there is room for only one generating system in a given territory. The Act recognized this fact and directed the TVA to acquire whatever properties might be necessary to make its system effective. The TVA responded by negotiating the purchase of all generating systems within its "natural" power area. The last major purchase was completed in 1945, since which time the TVA has occupied a monopoly position with respect to the production of power in a region which covers some 92,000 square miles and which is, therefore, somewhat more

¹³ 48 STAT. 64 (1933), 16 U. S. C. §831i (1952).

than twice the size of the river basin. With the acquisition of these private properties, the TVA came into possession of a number of steam plants. The bulk of its production nevertheless remained hydro: as late as 1950, the turbines of the big dams produced ninety per cent of the power required by the whole system, with steam plants supplementing hydroelectric generation during dry periods.

The tremendous growth in power requirements in the region during the war and (more especially) after confronted the TVA with an interesting problem. Having acquired all generating capacity and so having established itself as the only producer of electric power in the Valley, the agency found itself required to assume sole responsibility for meeting the region's power needs. It is not to be supposed that the TVA was slow to embrace this responsibility, although it may be doubted whether it foresaw the dimensions of the expanding needs. Its officers could hardly have anticipated the development of atomic energy, or the location of a prime atomic energy plant at Oak Ridge, or the location, within a very few years, of yet a second major atomic energy installation at Paducah. The TVA met the wartime needs by building new dams. By the early 'fifties, it had virtually exhausted the power potential of the river, and so was forced to turn increasingly to steam production. The TVA now operates eight steam plants, all but one of them constructed since 1950. Some of these are of moderate size, but most are quite large—the Kingston plant is the largest steam electric plant in the world, so far as records show. In 1950, total coal consumption by these steam plants was 500,000 tons; in 1956, it was almost 18,000,000 tons. In the former year, the steam plants accounted for only ten per cent of the total power production; in the latter, they contributed seventy-two per cent of the total. The integrated system generated 57.5 billion kilowatt-hours in 1956, an increase of thirty-eight per cent over 1955. Total installed capacity in that year was approximately 9,300,000 kilowatts.

On the marketing side, the TVA reached an early decision against acquiring distribution systems. Noting its obligation to give preference to states, counties, municipalities, and cooperatives, the TVA concluded to wholesale power to these units, encouraging and (where necessary) assisting them to acquire or construct their own distribution systems. This pattern has continued to the present time, with the TVA producing all the power generated in the region and local distribution systems marketing the power sold at retail.

The TVA presently disposes of its power to three major categories of users. First are the municipalities and cooperatives (the retail distributors), of which there are approximately 150. Second are some twenty industries which require such large blocs of power as to warrant service direct. Third are the federal agencies, which also are served direct. Chief among the last is the Atomic Energy Commission, whose consumption has increased from less than fourteen per cent of the TVA's total sales (less than two billion kilowatt-hours) in 1950 to fifty-six per cent of total sales (30.2 billion kilowatt-hours) in 1956. The federal agencies multiplied their use of TVA power fifteen times from 1950 to 1956.

It would be futile to attempt to evaluate this gigantic power program in the space available here. It may be worth while, however, to make a few observations. First, the system has been successful in meeting the heavy and rapidly increasing demands made upon it: not only has it provided the AEC with the power it has needed, but it has also supplied a rapidly growing industry and an expanding domestic market. Second, and with respect to the last item mentioned, the average residential use of electricity in the TVA area in 1956 was double the national average, while the cost was quite considerably less than half—1.16 cents a kilowatt-hour for the TVA region as compared with 2.62 cents for the nation. At the same time, thirty of the (about) 150 retail distributors reduced rates during 1956. Third, the TVA's power revenues were sufficient to provide a return of 3.9 per cent on the Government's average net power investment in 1956. From its power revenues, the TVA paid \$59,000,000 into the federal treasury, thus keeping well ahead of the forty-year payment schedule fixed by law.

It will be recalled that two nitrate plants were among the federal government properties at Muscle Shoals that were under such vigorous discussion from 1918 forward. Section five of the Act of 1933 contains the important provisions relating to the plants and the fertilizer program to be based on them.¹⁴ As in other connections, the Act left little to the imagination, providing in plain language for a bold and vigorous program for the manufacture and distribution of fertilizer. In brief summary, the board of directors was instructed to receive and operate the Muscle Shoals plants, to construct new facilities as needed, to conduct research and make experiments on new fertilizer materials, to devise effective methods for the distribution of its products, and to function either by direct action or through cooperation with existing agencies, all to the end that farm fertilizers be improved, their costs cheapened, and their use increased both in scope and effectiveness. As before, a more inclusive definition of mission could hardly have been devised.

In effectuating its broad-scale fertilizer-and-agriculture program, the TVA has proceeded along three major lines. First, it has conducted intensive research and has produced experimental and demonstration fertilizer materials at its Fertilizer-Munitions Development Center at Muscle Shoals. This chemical research and engineering center has been responsible for the development of a number of new materials which found their way into the commercial fertilizer industry. Concentrated superphosphate provides an example. When the TVA began research and experiment on this material in 1934, it was not accepted as a marketable product by the fertilizer industry; by 1938, the industry was producing somewhat less than 90,000 tons; but by 1955, commercial production had increased to 1,500,000 tons. As a second example, the TVA has been active in the development of ammonium nitrate. In 1943, the farmers of the country used 18,210 tons of this material for direct application, whereas consumption for 1955 was 1,115,358 tons. As a result of its research and experimental work, the TVA has obtained more than 100 patents. Its patented

¹⁴ 48 STAT. 63 (1933), 16 U. S. C. §831d (1952).

processes are available on a royalty-free basis to fertilizer, chemical, and equipment manufacturing companies.

Second, the TVA has entered into cooperative research agreements with the land-grant colleges of fourteen states. These agreements call for tests by the scientists of the agricultural experiment stations of the applicability of TVA fertilizers to the soils of their areas. The TVA varies its research and developmental program constantly in response to new or changing needs thus discovered.

Third, the TVA engages in a test-demonstration program designed to allow farmers to learn by direct observation what materials are available and what results may be anticipated from their proper use. This program, which rests upon the "whole farm" idea, pledges a selected farmer in a community to use TVA test-demonstration materials under the direction of the local county agent. The demonstration farm becomes, in effect, a local experiment station. Since the beginning of the test-demonstration program twenty-one years ago, 31,178 farms totaling more than 6,000,000 acres and located in thirty-five different states have participated. In 1956, 3,066 farms in twenty states were active in the program. A different kind of educational device is found in the distributor-demonstration program, through which wholesale fertilizer distributors (fifty-eight large cooperatives and sixteen private firms scattered through thirty-five states in 1956) undertake to introduce to farmers new and improved TVA-developed fertilizers and to promote better fertilization practices. In 1956, the TVA distributed for its educational programs about 263,000 tons of fertilizer, which was only slightly more than 1.6 per cent of the total amount used in the country that year.

To this point, not much has been said either about the Tennessee Valley or about farm practice as such. The Act of 1933 conceived a fertilizer program which would be national in scope; and the TVA in pursuit of its statutory mission has devised and carried on a program not limited to the Tennessee Valley—TVA executives think of the fertilizer program as the only one for which the agency was given a clear national responsibility. It should be emphasized nevertheless that the activities described above center on the Valley and that every new activity is launched on the tacit assumption of active participation by all appropriate regional interests. Thus the fourteen land-grant colleges with which the TVA maintains fertilizer research agreements include the colleges of the seven valley states. So also the twenty states in which the TVA participated in farm test-demonstration programs in 1956 included the seven valley states. Concerning local (regional) farm practice, the farm test-demonstration program has many immediate and direct effects. A very tangible result of the program occurs from its emphasis on soil conservation—that is, on protection of the soil against washing and erosion. The agricultural relations staff is keenly aware of the connection between individual farm practice and such major problems as resource conservation and reservoir siltation. It is significant that the agriculture people are active participants in the agency's small watershed program. The ramified local activities of the agricultural relations staff, and particularly the

many activities which it pursues jointly with other divisions, give proof once more of the interrelatedness of the problems of natural resources and their administration.

In the emphasis here placed on fertilizer and agriculture, sight should not be lost of the munitions aspects of the program. A TVA official who knows the chemical engineering operation intimately recently remarked, "We have plants that could manufacture fertilizers until 5:00 o'clock one afternoon, and begin with the production of munitions at 8:00 o'clock the next morning." But military contributions are not limited to wartime, for the Fertilizer-Munitions Development Center is engaged in research and experimental work for the Army on a continuing basis. The Army Chemical Corps established a plant at Muscle Shoals in 1950, since which time the TVA has contributed even more actively to the work of the Corps both through staff participation in research and through production of basic materials.

A declared purpose of the Act of 1933 was "to provide for reforestation and the proper use of marginal lands in the Tennessee Valley. . . ."¹⁸ The concern of Congress for the forest resource was well placed, for fifty-four per cent (14,000,000 acres) of all land in the Valley is in forests and farm woodlands. In some areas, ninety per cent of the land is in forest. The bulk of the forest cover is hardwood, although there is a considerable growth of conifers. Much of it is inferior in quality and of little commercial value, having suffered from decades of ill use and neglect. When the TVA came on the scene in 1933, up to ten per cent of the total growth was ravaged by fire every year, forest users were destructive and negligent, and state and local programs for the encouragement of sound forest management were in a rudimentary stage.

The TVA's first chief forester recommended a bold program of public acquisition and operation. He would have increased public ownership from twelve to almost fifty per cent, most of which would have been put into national forests administered by the Forest Service. As much as 500,000 acres, however, would have been held by the TVA for purposes of experimentation and demonstration in sound forest management practices. The board of directors was not sympathetic toward this recommendation, and instead of adopting it, they hired a new chief forester and instructed him to develop a program of public aid to the owners of privately-held forest land.

This has been the focus of TVA action for twenty years. The bulk of all forest land (eighty-two per cent) remains in private ownership. It is the policy of the TVA, through its modest division of forestry relations, to render private owners all possible assistance in the protection and improvement of forests and in the development of sound forest management practice. Its assistance is channeled largely through state and local agencies, notably the state departments or divisions of forestry (or equivalents) and the county agents of the agriculture extension service.

The TVA's methods of operation are several. First, it maintains two large nurseries from which it has supplied millions of seedlings each year without charge.

¹⁸ 48 STAT. 58 (1933).

Since 1934, 328,000,000 seedlings have been planted on 287,000 acres in the Valley; of these the TVA has supplied ninety per cent. In 1956, the TVA furnished some 15,200,000 seedlings which were planted on 15,300 acres by 3,800 land owners. Notwithstanding this active planting program, approximately 1,500,000 acres are still in need of reforestation. The TVA recently increased its production capacity for seedlings to 30,000,000 per year in an effort to reduce drastically the 100 years previously estimated to be required for completion of the reforestation program. The states are increasingly active partners in this program; in 1956, for the first time, they supplied more than half (fifty-five per cent) of all seedlings planted in the Valley.

Second, the TVA for many years has placed heavy emphasis on protection of the forests against fire. It has assisted the states in planning, organizing, and strengthening fire prevention programs and has cooperated in the establishment of fire danger stations. Of the 125 counties in the Valley, 105 now have organized fire protection; they include ninety-two per cent of the total forest acreage.

Third, the agency has participated in a number of activities designed to improve forest management. It has set up a total of 290 forest management demonstrations and has conducted 110 timber-harvesting demonstrations in cooperation with a considerable number of interested agencies, private as well as public. It has worked closely with sawmill interests, conducting conferences, making studies, and otherwise seeking to improve practice in that ramshackle business.

Fourth, the TVA has conducted a continuing forest inventory over the years. Its aim here is a permanent inventory, by counties, of the extent and condition of the forests, kinds of trees, growth rates, and the like, on the basis of coverage of each county not less often than once in ten years.

In 1948, the annual value of forest products in the Valley was estimated at \$100,000,000. By 1956, the value had risen to almost \$400,000,000. The TVA believes that the annual income from forest products can be brought to \$1,000,000,000 with reasonable care and effort. The progress recorded in recent years indicates that this is an attainable goal.

The TVA has made recreation a secondary but important program concern almost since its beginning. The agency operates no recreational areas or facilities, but instead encourages action in the field by others. Its very small recreational staff (which is associated with the division of reservoir properties) therefore confines itself to these kinds of activities: (1) advice with regard to the recreational disposition of TVA properties; (2) research on recreational problems; and (3) consultation with state and local officials and with representatives of private interests regarding the development of facilities and the management of programs in the recreational field. As in the case of other programmatic activities, the TVA's role is educative, facilitative, and cooperative.

This approach to recreation has produced some striking results. Throughout the United States, pleasure craft increased in number about 127 per cent from 1947

to 1955; during the same period, they increased nearly 270 per cent on the TVA lakes. Over the same span, the estimated value of recreational facilities and equipment on the TVA lakes increased 317 per cent, for a total value in 1955 of \$53,200,000. Commercial recreation operations, which existed only in rudimentary form twenty-four years ago, in 1955 produced an income of \$6,300,000. In 1933, there were few state and local parks in the region; now there are sixty-five such parks (twelve of them state), with facilities valued at \$7,400,000. Although the TVA operates no parks, its lakes themselves have great drawing power: of the ten federal reservoirs having more than 1,000,000 person-day visits in 1952, seven were in the Tennessee Valley. Fishing, both sport and commercial, is excellent and is increasing rapidly: in 1941, Tennessee sold about 13,000 nonresident fishing licenses; ten years later it sold 190,000. It ranks fourth among the states in nonresident fishing licenses issued. So bountiful is the fish supply that closed seasons for the TVA lakes have been eliminated, while some states permit commercial fishing by net. Thus has an activity quite incidental to the major statutory purposes of the TVA made an important place for itself in the full developmental program of the Valley.

Health escaped mention in the 1933 Act, but health activities nevertheless have achieved significant status in the TVA's total program. With the work of the division of health and safety among TVA employees we need not concern ourselves, although it is worthy of the record that these activities have been highly important, especially on the great construction projects. The functions relevant to the present story concern malaria and stream-pollution control. The great lakes brought with them complex problems of malaria control, more especially because a considerable part of the Tennessee Valley was malaria country, with the incidence of that disease as high as thirty per cent in some localities. The TVA's problem, therefore, was more than one of avoiding further encouragement to the disease, for it had to bring malaria under control if only to increase the efficiency of its working force. There were those in the Valley in 1935 who averred this could not be done, or who insisted that it could be done only at the cost of destruction of fish life in the lakes.

The story of achievement is a dramatically simple one: malaria has virtually disappeared from the Tennessee Valley in the last twenty years, so that in 1955 it could be reported that for the seventh consecutive year there had not been a single case of malaria traceable to mosquitoes originating on the TVA lakes. This remarkable result has been achieved by varying the levels of the lakes in a way to interrupt the life cycle of the mosquito and by auxiliary spraying. The former operation requires close synchronization with other program activities, and demonstrates once again the essential unity of the problem of river basin development.

The control of stream pollution has been a central concern of the TVA from the beginning, for polluted water has limited value for industry and little or none for recreational and domestic users. This has been a continuing battle over a period of twenty years. In waging it, the division of health and safety has put together an ingenious combination of federal, state, and local agencies and officials, and of repre-

sentatives of industry as well. The result over the years has been the substantial amelioration of a nuisance which is extremely difficult if not impossible to eliminate. Nowhere, it may be added, has the TVA's system of voluntary cooperation paid richer dividends.

The TVA Act of 1933 instructs the President from time to time to recommend legislation, in conformity with the general purposes of the Act, to bring about¹⁶

. . . (1) the maximum amount of flood control; (2) the maximum development of said Tennessee River for navigation purposes; (3) the maximum generation of electric power consistent with flood control and navigation; (4) the proper use of marginal lands; (5) the proper method of reforestation of all lands in said drainage basin suitable for reforestation; and (6) the economic and social well-being of the people living in said river basin.

This series stands as a statement of the expectations which Congress entertained of the TVA in 1933. It stands also as a recapitulation of the new agency's mission, although it does not appear in precisely that context. Here ends our summary of the manifold program devised to meet these grave and varied responsibilities. It will prove interesting to reflect on the nature of the regional development program authorized by the statute and on the administrative translation of that program into action. Has the TVA given accurate interpretation to the legislative intent? Are the program activities it has pursued reasonable in terms of the statutory authorization? Did they promise to achieve the purposes set forth in the law? Have they, in fact, done so? What are the virtues and the weaknesses of the TVA program in terms of a broad plan for regional development? Has the program changed materially in character or in balance since 1933? These are representative of the questions which suggest themselves for consideration as one weighs the issue of legislative intent and administrative achievement.

IV

METHODS OF WORK

When the directors of the TVA came down to eastern Tennessee in the summer of 1933, they might have proceeded along any of a number of alternative courses. Specifically as regards methods of work, they might have set up their own operating (as opposed to staff service) organization: they might have created a number of functional departments and so have launched the new agency as an individual entity with general, or at least broad, governmental responsibilities. One member of the board, indeed, favored this course. A second, however, supported the policy of keeping the TVA organization at a minimum and utilizing the existing machinery of state and local government to the extent that might prove feasible. The differences between the two broadened into a schism which shortly broke into public controversy. The issue was resolved when the expansionist member was removed and the way cleared for adoption of the policy of collaboration.

¹⁶ 48 STAT. 69 (1933), 16 U. S. C. §831V (1952).

The decision to employ existing machinery to the extent practicable at once produced a number of significant consequences. For one thing, it meant that the TVA would not develop a vast functioning machine, such as might have been expected, but that it would, on the contrary, operate fundamentally as an administrative staff. This consequence prevailed in all except two important substantive areas: in the power and water-control fields, the TVA did assume functioning responsibilities, which it continues to acknowledge and to discharge to this day. In other areas, the TVA's initial decision predestined it to the role of planner, researcher, counsellor, encourager, demonstrator, and *agent provocateur* in general. Its role, in short, was to become that of a regional staff agency without operating responsibilities, except in the fields of power and flood control.

Another direct consequence of the original decision was that the TVA was confronted immediately by the necessity of procuring first acceptance, then adoption, then administration of its program by other governments through voluntary means. The TVA had the authority, as it also had the support in the early days, to undertake a galaxy of programs on its own responsibility; but it had no authority to compel the cooperation of any other agency of government, federal, state, or local. In short, it had no sanctional authority, and so from the beginning it had to depend on moral leadership, friendly persuasion, and cajolery. Its announced policy therefore in some sense placed it at the mercy of the governmental mechanism long existent in the Valley.¹⁷

It must be recorded that the TVA's top officials regarded this as a blessing rather than an obstacle. They accepted the challenge gladly and proceeded to explore and then to exploit whatever strengths might be discovered in the system of voluntary cooperation. The result, which has taken form gradually over the years, is an extraordinary complex of intergovernmental and public-private arrangements by which the TVA has contrived to procure the implementation of its program. These arrangements rest upon contracts, agreements, and simple understandings; they involve state, county, municipal, and special local public agencies, not to mention other federal agencies and a variety of private businesses and industries as well; and they run the gamut of the TVA's programmatic activities, some treating of affairs of vast account, some of minuscule matters that one might normally overlook. It is the intricate network of collaborative activities growing from these arrangements that the TVA calls, with good reason, cooperative administration. Whatever the possible untoward results of this system, it has allowed the TVA substantially to increase its resources in the discharge of its program responsibilities.

A corollary of the system of cooperative administration is that the TVA has been engaged in the practice of "partnership" almost from its inception. If that term is interpreted to mean reciprocal and cordial relations with other governments, then

¹⁷ PHILIP SELZNICK, *TVA AND THE GRASS ROOTS* (1949), advances an interesting thesis regarding the "unanticipated consequences" of what is denominated the TVA's method of administration by "cooptation."

the TVA may be said literally to live by the tenets of partnership. If it is interpreted to mean constructive relationships between government and business, the TVA knows partnership in that sense as well. Years ago, the agency worked out an arrangement with the Aluminum Company of America by which the Company, in effect, surrendered a number of its dams for integration into the TVA system, and in return received a guaranteed power supply. Some five years ago, the TVA collaborated to bring about a several-million dollar chemical development (in which a number of companies participated) in the vicinity of Calvert City, Kentucky. The TVA's assistance to the Bowaters Southern Paper Corporation in locating its great new newsprint plant at Calhoun, Tennessee, is a matter of general knowledge and has been publicly recognized by Bowaters spokesmen. Mention was made earlier of the long-standing practice of cooperation with the fertilizer industry, which practice in 1956 resulted in the issuance of twenty-five royalty-free licenses to private companies for the use of processes patented by the TVA. The partnership idea is in no wise new to the TVA, which has lived according to its principles for well over twenty years.

In another of its guises, the TVA appears as a primary source for the region of what has come to be called technical assistance. Long before the term had gained its present currency, the technicians of the TVA were rendering research, advisory, and frequently demonstration services both to governments and to private businesses in the Valley. Given its commitment to the principle of cooperative administration, indeed, the chief commodity the TVA has to offer is the technical knowledge and competence of its staff. It is of the essence of the practice of technical assistance that it be made available by the donor but that the decision regarding acceptance be left wholly with the prospective recipient. This, too, is entirely in harmony with TVA practice.

The net result of most of what has been said is that the TVA is in essence a regional planning agency. Only in the production of power and in flood control does it take substantial direct action; in every other field its activities are primarily of a staff (service) rather than an operational character. It makes plans and it makes proposals, but the final decision on action normally rests elsewhere. Some of its plans it can of course carry into effect, in whole or in part—for example, it has made and executed plans for establishing a nine-foot navigation channel from Knoxville to the mouth of the river. But in most respects, and this is true particularly of the domain of economic and social development, the TVA conducts studies, makes reports, devises plans, and proposes recommendations. In a very important sense, therefore, it is a planning agency in the technical meaning of the term. In absence of the will to take or the power to compel action, the power of decision lies outside the TVA. Basically, it resides with the many agencies and organizations, public and private, on which the TVA so largely depends for implementation of its program.

V

PROBLEMS

Every public agency, it may be supposed, has its problems; but a new and vigorous agency operating in an uncharted field may expect to be confronted by issues more numerous, more severe, and more controversial than usual. Even its critics might allow that the TVA has been called upon to deal with at least its fair share of problems over its twenty-four-year span. Three general problem areas which continue to require attention by the TVA have been chosen for summary analysis here.

The first may be identified as the need to adapt to changed and changing conditions. Born during a time of dire national stress, the TVA has spent virtually its entire life moving from the crucible of one emergency to the challenge of the next. The stresses of the depression, defense, and war years presented clear and present dangers that had to be met head-on. The postwar period, which might have been expected to bring some relief, produced instead a continuing emergency, what with federal agencies (principally the AEC) in the Valley increasing their demands for power year by year and the TVA responding by building dams and steam plants furiously to meet the growing need. The national election of 1952 confronted the TVA with quite a different kind of emergency; for here, for the first time, was a national administration which was not friendly to the agency or its program. Depression, war, boom, cold war—here are Four Horsemen to test the resiliency and resourcefulness of any agency. The TVA has come through two with courage and honor. It has met the harsh requirements of the third to the extreme limit of the resources vouchsafed to it, but the end there is not yet. What of the fourth, which in many respects confronts the agency with the gravest challenge of its career? The options offered here are not clear, even after four years. What is clear is that the TVA faces yet another emergency which requires a high degree of adaptability and great ingenuity.

A second important problem concerns the method of financing TVA operations. For many years, the agency was financed mainly by appropriations made by Congress. As a substitute for or supplement to appropriations, two possible sources of funds have been suggested: first, the sale by the TVA of (revenue) bonds, which would be serviced from the earnings of the facilities they would finance; and second, the use of the TVA's corporate funds (power earnings). Acquaintance with the uses and limitations of each form of financing is important to an understanding of the problem. Funds appropriated by act of Congress may, of course, be devoted to any purpose stated. Such funds are the normal source of support for general programs, particularly those which do not produce significant revenues from operations. It was from appropriated funds that the TVA's economic and social development programs, described above, were financed in earlier years. Revenue bonds by definition are available only for the capital financing of enterprises which earn substantial revenues. For the TVA, such bonds presumably could be employed only

to finance the improvement or construction of plants (or facilities connected with plants, as transmission lines) for the production of power, since no other activity would appear to offer the hope of financing bonds from earnings. In any case, Congress would have to approve the use of bonds. Corporate funds, it has been held, may be employed only for financing power developments, since they accrued from power earnings. Further, such use is subject to a severe limitation; for while corporate funds can be employed for improving or expanding existing facilities by board approval alone, their use in financing new projects would require congressional authorization. It must be added that corporate funds, at best, provide only a supplementary means of financing, since they are not adequate in amount to meet construction needs even if they were available for use without restriction.

Summarizing, so far as the financing of general programs is concerned, no alternative to congressional appropriations has been suggested. As regards the power program, Congress has not been willing thus far to authorize the use of bonds. Construction during the last few years therefore has been limited to increasing the capacity of existing facilities through employment of corporate funds. By 1960, all existing plants will have been stepped up to their full capacity, and power revenues therefore will no longer be available to provide increased production. The TVA believes that it will be able to meet the region's power requirements to 1960. For the expansion of generating capacity after that date, it will need (1) new money from appropriations, (2) new money from sale of its own bonds, or (3) authority to use corporate funds for new construction (as noted above, this would not provide enough money to meet the needs)—and all require congressional approval. Construction of a large generating plant under normal conditions takes three years. Meanwhile, the demand for electricity in the region is advancing at the rate of almost fifteen per cent a year. Clearly, the outlook for the power program is a bleak one.

But consider how much harder is the lot of activities which have neither considerable appropriations nor significant earnings. The Act of 1933 projected a general program for the economic and social development of the Valley under which substantial progress was made for almost twenty years. In the last four years, however, the nonpower programs have suffered both a relative and an absolute decline. Relatively, they have fallen farther and farther behind as the TVA management, fighting to meet its obligation to supply the power needs of the region and of national defense, has contrived to continue to expand generating capacity while the program otherwise has slowed to a walk; absolutely, resource-based activities, almost wholly dependent upon congressional grants, have seen their appropriations dwindle year after year until they are in some instances little more than shadow operations.¹⁸

¹⁸ In 1947, the top year for resource-based activities, expenditures in that area totaled about \$7,500,000. Budget authorizations have diminished steadily since. The 1954 estimate for resource development, as presented to Congress, totaled \$2,397,000. The House of Representatives eliminated the entire item, which was restored with a ceiling of \$1,350,000 at the insistence of the Senate. Subsequent reclassification by the TVA of some activities in the resource-development category reduced the amount effectively available, in consideration of the ceiling set, to \$1,160,000.

Contemplation of the problem of financing leads logically to consideration of a third major problem area, which concerns the need for constant redefinition of program. This need, always present, has become acute in view of the developments described above. The TVA has been called essentially a producer and wholesaler of electric power, with little to justify its existence beyond that. Historically, this view clearly is erroneous, but currently there is some justification for the suspicion that the TVA is coming gradually to resemble a giant utility operation. Evidence is found not so much in the increase in power output, which appears to be not only necessary but inevitable, as in the retrogression of the other phases of the program. The overwhelming fact is that in recent years the TVA has become more and more an electric utility enterprise and less and less a regional resource-development undertaking. In terms of preservation of the regional values established by the Act of 1933, this trend must be reversed and a measure of balance recaptured very soon; in particular, natural resource activities must be restored to their earlier prominent place in the total program if the integrity of the TVA as a regional resource agency is to be maintained.

VI

TRENDS AND PROSPECTS

A summary analysis of trends may begin with 1952. In that year, as has been noted, a national administration not wholly friendly to the TVA came into office. In 1954, a new chairman of the board of directors was appointed. A man of long experience in the Corps of Engineers of the United States Army, the new appointee had had no previous experience with the TVA. He came, therefore, it may be surmised, as something of a stranger to both the concept behind the TVA and the methods employed by it.

1. In the circumstances, it is not strange that some basic philosophical divergences have appeared. The President revealed himself to be somewhat less than wholly enthusiastic about the TVA at the time of his election, and he has not become a warm supporter of the agency since. On the contrary, his administration has emerged as a vigorous exponent of private power. The new board chairman views the TVA as being primarily a public utility system. He has, therefore, tended to regard the program for regional development prescribed by the Act of 1933 as so much "sociological experimentation." He seems to accept with equanimity the relative increase in emphasis on power production of the last few years. To many this attitude represents a sharp break with the philosophy which guided the TVA to 1952.

2. Vigorous espousal of the new point of view by the chairman has led to considerable disagreement within the board of directors, two members of which have continued to promote the long-established general program with equal vigor. The easy personal relations within the board which prevailed for a matter of seventeen

years have dissolved before what the old members regard as a frontal attack on the fundamental concept on which the agency was founded.

3. In consideration of the resulting atmosphere of frustration and uncertainty, a number of key staff members have resigned. Some doubtless would have left in any case, but some unquestionably departed because of what they considered to be the narrowing of opportunity for achievement. Some, intellectually and emotionally committed to a program of regional development, were not willing to remain as employees of what threatened to become essentially a public utility enterprise.

4. The TVA's budget has continued the downward trend which started some years ago, with the consequent fiscal dilemma outlined above. For some years the funds available have proved quite inadequate to carry on the program hammered out during the mid-thirties and vigorously pursued from that time until the early 'fifties.

5. In the new period of austerity, the natural resource programs have suffered more than the power program. It cannot be emphasized too strongly that the resource-based activities, modest though they have been,¹⁹ have been the difference between a public utility undertaking and a broad program for regional development. These activities have gone into eclipse in recent years, and the TVA increasingly has taken on the appearance of an electric utility corporation.

In terms of the criteria appropriate for evaluating the health and general well-being of an administrative agency, the condition of the TVA does not appear good nor the immediate prospect before it bright. In appraising governmental policy and action on the national stage, however, standards other than the pragmatic test of agency and program survival are applicable. Two of these are worthy of note in the present context.

The TVA was created in 1933 to carry on a broad program of regional development. Since no administrative agency may expect to enjoy eternal life free from worldly vicissitudes, it is not a matter for wonder that the TVA has come under programmatic attack. Nor does such attack necessarily represent a catastrophe, except perhaps in narrowly institutional terms. The basic question would seem to be, how well has the TVA achieved the purposes for which it was created? Rephrased, has the TVA carried its program of general regional development to the point where its continuing support is no longer vital to achievement of the goal set? There is much evidence to support the thesis that a valley development agency is, in truth, not as imperatively necessary in 1957 as it was in 1933. The evidence turns in part on the tremendous growth of state and local agencies (with their attendant activities) in the natural resource field—state departments of conservation, forestry, agriculture, and commerce; state and local recreational facilities and activities; and the like. It turns in part on the great industrial development of the Valley during the last several years, and more especially on the increasingly intelligent practice of resource

¹⁹ In 1953, before resource-development activities received the *coup de grace* described in note 18 *supra*, the sum spent in that area represented less than 2% of the TVA's total budgeted expenditures.

management by private enterprise. It turns, finally, on a developing regional attitude on the part of both government and business in the Valley—on recognition of the facts that natural resources constitute a "seamless web" and that the problems involved in their administration cannot be solved by limited or parochial measures. It may be argued that, in these terms, the TVA has made its major contribution to the Valley. This is not to suggest that there is no longer important work for such an agency, but only that the work which remains to be done (which, of course, will never be finished) can be accomplished with much greater satisfaction by local institutions (private as well as public) in 1957 than in 1933, and that the progress of the Valley is therefore much less dependent upon a regional agency now than it was twenty-four years ago. If this is indeed the case, then the TVA has good cause for satisfaction; for both its program and its method of administration were designed to hasten achievement of the goal of regional self-confidence and self-competence which may now in fact have been attained, or closely approached. By standards appropriate for national evaluation, then, the TVA may largely have achieved its original purpose of regional development even at a time when, in institutional terms, it seems to languish.

In a different but not unrelated direction, the evidence that our federal system is under severe stress, owing in part to the inadequacy of the states in certain program areas, is unmistakable. To put the issue positively, it grows increasingly clear that there are regional needs which conventional governments employing traditional measures cannot meet. The TVA is a regional agency. True, it is a federal agency, but it operates at far remove from Washington and historically has pursued a program of truly regional import. Further, its jurisdiction is defined in terms of a river watershed, which is perhaps the most satisfactory basis available for delimiting the boundaries of a region. From the point of view of the states, the TVA has claimed no authority to issue commands, but only the right to seek voluntary cooperation. Far from offering a threat to the states and the localities, the TVA might well be found on further consideration to have added a new dimension to their activities and fresh energy to their efforts. There is evidence to support the thesis that the TVA's principal permanent contribution to American government lies in the example it has provided of a regional agency in operation. It is suggested that the TVA idea is worthy of evaluation within this framework.

THE MUSKINGUM WATERSHED CONSERVANCY DISTRICT: A STUDY OF LOCAL CONTROL

LYLE E. CRAINE*

I

INTRODUCTION

The creation of the TVA in 1933 stands out as a landmark in the annals of drainage basin development. Less well-known is the fact that in the same year, the Muskingum Watershed Conservancy District (MWCD) was established to conduct a program of integrated land and water development in the Muskingum River basin of Ohio.

In addition to the coincidence of birth, the MWCD shares certain elements of paternity with the TVA. Both are a product of depression and New Deal public works programs; and both bear an early imprint of Arthur E. Morgan. The genetic relationship of the two agencies, in fact, extends to their fundamental purposes and objectives. The Muskingum District, in its infancy at least, viewed its mission as similar to that of the TVA and recognized that it, like the Authority, was a great experiment in the mobilization of the resources of a river valley for the benefit of its people. However, its founders were proud that the District was distinctive in its preservation of local responsibility and control. This was expressed by one of its early leaders when he said:¹

The novelty of the Muskingum project lies in the fact that it is the first instance of cooperation between the United States Government and a local subdivision of a state government in such work. . . . If it works well, it will serve as a model for further cooperative effort between the national and local governments for flood control, water conservation, and social and economic improvement throughout the nation.

The Tennessee Authority is a federal corporation. The Muskingum Conservancy District is a state corporation. In the Tennessee Valley, the Federal Government takes the lead and invites cooperation from local subdivisions of government. In the Muskingum Valley, the Conservancy District takes the lead and receives cooperation from the Federal Government. But both projects develop a partnership or cooperative effort between federal and state governments for the conservation of natural resources and the general social and economic welfare of the nation.

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¹ Address by Robert N. Wilkin, *The Muskingum Watershed Project*, delivered at the Annual Citizenship luncheon, Lakewood, Ohio, March 6, 1934. Judge Wilkin, a former member of the Ohio Supreme Court, was an early leader in the formation of the MWCD and served as its first general counsel. He is now a District Judge in Washington, D. C.

Here, the MWCD recognized some relationship to the agency taking root in the Tennessee Valley, and as the "poor cousin" that it was, it laid down the challenge to its federal cousin.

However, the significance of a critical analysis of the Muskingum District in a symposium on water resources extends beyond the MWCD's common heritage with the TVA and such comparisons or contrasts as might be made. After more than twenty years of operating experience, many today believe that the District's unique contribution lies in the fact that "It demonstrated the great possibilities of watershed development and management for the public benefit . . . [and] at the same time it showed how this could successfully be accomplished by local initiative, planning, organization and responsibility. . . ."² With the intensification of land and water problems of recent years, the need to practice integrated drainage basin development and watershed management has become increasingly urgent. There are many technical aspects of the interrelated behavior of natural processes in a drainage system which cry for further study and research. However, today the central problem in drainage basin development is less one of technical know-how than of social inventiveness in organizing people and their institutions for the coordinated administration of land and water development activities within the context of an appropriate drainage area.

The study and appraisal of various efforts in drainage basin development are fundamental to a better understanding of the requirements for effective administration of water resources programs. The MWCD is one such effort. It is the purpose of this paper to present a critical evaluation of that agency's experience in planning and carrying out a land and water development program in the Muskingum Valley.

There are many different facets of the MWCD's experience which are of significance to students of natural resources administration—whether they be interested primarily in law, economics, political science, administration, or various technical fields of resources management. This paper, however, must be limited to some of the broader aspects which relate more directly to organizing and administering a basin-wide program. Its objective, therefore, is to shed light on the following questions:

1. How effective has the MWCD been in developing and maintaining a comprehensive program of land and water development in the Muskingum basin?
2. How effective has the MWCD been in maintaining local direction and control of the development program?
3. What are the forces which have played upon the MWCD in its effort to maintain a comprehensive program and to retain local direction and control of the basin's development?
4. What do the MWCD's successes and failures suggest as to the role of a small agency for drainage basin development?

In considering the significance of the MWCD's experience as a guide for the

²E. H. Taylor, Senior Associate Editor of *Country Gentleman*, quoted in MWCD (1955).

future, an important caution is noted. It should be recognized that the Muskingum basin is entirely within a single state. The MWCD's jurisdiction, therefore, is intrastate. This means that the MWCD has not had to cope with the complexities of interstate relations which often seem to constitute the major administrative problems in the larger interstate basins. Nevertheless, there are hundreds of intrastate drainages in this medium-size range which may find guidance from the Muskingum experience.

II

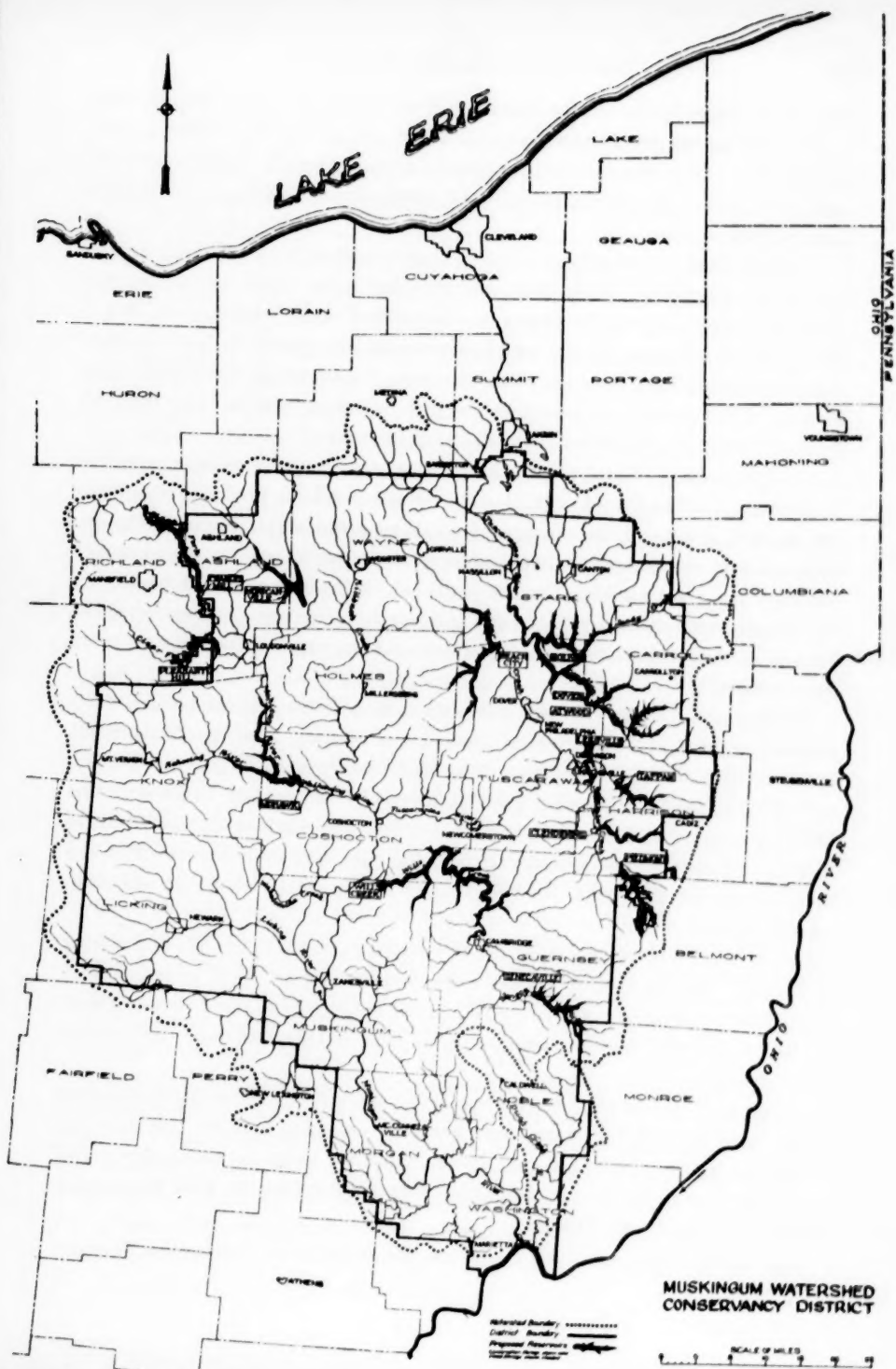
THE MUSKINGUM BASIN AND ITS PROBLEMS

The Muskingum basin, located in southeastern Ohio, is the largest single drainage in the state. Containing 8,038 square miles, it comprises one-fifth the area of Ohio and geographically dominates the eastern half of the state. Extending approximately 125 miles north and south, the basin spreads 100 miles east and west at its widest points. The most northerly boundary of the watershed lies within twenty-five miles of Lake Erie, just west of Akron, and the southern boundary converges on the city of Marietta, where the Muskingum River discharges into the Ohio River. In 1950, one million of the state's six million people lived in the Muskingum Valley.

Physiographically, the basin is a part of the Allegheny plateau. Like most of this plateau, it is a highly dissected topography. Approximately one-third of the watershed in the northern and western portions has been levelled and filled by successive advances and retreats of the pleistocene glacier. In general, therefore, the topography changes from northwest to southeast from a moderately undulating glacial till plain of low and gentle relief, to sharp and intricate hill and valley topography of the unglaciated plateau, varying in altitudes from a low-water level of 570 feet at Marietta to 1,000 or 1,100 feet in the nearby vicinity.

The drainage system of the Muskingum basin is composed of the Muskingum River and four principal tributaries. The northeast quadrant of the basin is drained by the largest tributary, the Tuscarawas River, which rises in the western suburbs of Akron. The Wahoning River and its branches drain the northwest quadrant of the watershed. These two major tributaries join at Coshocton, the geographic center of the basin, to form the Muskingum River. Two lesser streams, the Licking River from the west and Wills Creek from the east, share the drainage of the southern portions of the basin with many smaller tributaries draining directly into the Muskingum River proper. Both the Licking and Wills Creek discharge into the main stem within thirty-five miles of the confluence of the two larger northern tributaries.

The Muskingum River from Zanesville southward is confined in a relatively narrow and deep postglacial valley. Thus, the Muskingum drainage area has many aspects of a true basin. From its outer fringe, a major part of its drainage converges on the general center of the basin, represented by a relatively short stretch of the



main stem. From this center, the drainage is bottlenecked through seventy-five miles or more of a narrow postglacial valley, to be discharged, as from the nozzle of a hose, into the Ohio River. Consequently, in times of excessive run-off, uncontrolled drainage, constricted at the outlet, backs up on Zanesville and Coshocton to produce extreme flood stages.

In many ways, the Muskingum Valley is the cradle of Ohio. The Ohio River was the great waterway to the West, and the Muskingum River was the gateway to the Ohio Territory. Early agriculture was confined to the bottom lands. But as the valley lands became thickly settled, newcomers were forced to stake out their claims in the adjoining uplands, which they soon discovered produced good crops. By 1881, all but eighteen per cent of the original hardwood forest had been removed. By 1934, twelve per cent of the land still remained in trees.³

Changes from woodland to farm land during 125 years of settlement permitted accelerated run-off and rapid removal of the fertile top soil that produced good yields for the early settlers of the uplands. Especially on the steeper slopes of the unglaciated area, the removal of humus-charged absorptive topsoil has caused serious reduction in the water-holding capacity of the soil. It has been estimated that during the period of agricultural use, an average of five inches of topsoil—representing about one-half of the soil resources of the basin—have been removed from the farms of the watershed.⁴

By the 1930's, erosion had made it imperative to convert a large proportion of the cropland to pasture. These pastures had a low carrying capacity. Many farms could no longer operate profitably. Abandoned farms, tax delinquency, state aid, and the number of families on relief increased. This situation hastened in the Muskingum watershed the changes which characterized much of the United States in the first decades of the twentieth century—the movement from farms to cities and villages and the movement from agriculture to expanding industries and commercial pursuits.

As the cities and villages along the watercourses grew, land and water problems intensified. The flood plains became more densely occupied; flood losses increased in frequency and magnitude; larger volumes of industrial and domestic waste were added to silt-loaded streams; pollution grew more serious; and water supplies became overtaxed.

These problems, arising from the manner in which the people of the Muskingum Valley used its land and water, were gradually emerging over the century of its human occupancy. Not until 1933, however, did the forces for community action on the common problems of the basin congeal in the establishment of the Muskingum Watershed Conservancy District.

³ See H. HOWE MORSE, *EROSION AND RELATED LAND USE CONDITIONS ON THE MUSKINGUM WATERSHED* (1939).

⁴ *Id.* at 2.

III

THE MUSKINGUM WATERSHED CONSERVANCY DISTRICT

The MWCD and the Conservancy Act of Ohio,⁵ under which the district is established as a corporate subdivision of the state, had their roots in the great floods of 1913 which wrought havoc and destruction on all of southern Ohio. The immediate impetus for the passage of the Conservancy Act came largely from the leaders in the Miami Valley. This valley, in which the city of Dayton is located, was the most severely damaged by the 1913 flood. Soon after that catastrophe, the people of Dayton and of the Miami Valley organized to seek effective protection against recurring floods. As a part of their efforts, they sought state legislation which would enable counties to join together in special administrative and tax districts for the purpose of providing flood-protection measures. As a result of these efforts, the Conservancy Act of Ohio became law on February 17, 1914. The Miami Conservancy District was the first of the Ohio conservancy districts organized pursuant to this enabling legislation. It was twenty years later before the Muskingum Valley utilized the authority of the Conservancy Act to establish the Muskingum Watershed Conservancy District.

The Conservancy Act authorizes conservancy districts for the purpose of preventing floods; regulating stream channels by changing, widening, and deepening the same; reclaiming or filling wet and overflowed lands; providing for irrigation where needed; regulating the flow of streams; and diverting or, in whole or in part, eliminating watercourses. Any area or areas in one or more counties may organize a conservancy district by filing with the clerk of the court of common pleas of one of the counties in the proposed district a petition signed either by 500 freeholders or by a majority of the freeholders in the territory to be organized. Upon determination of the sufficiency of the petition in accordance with law, the judge of the court of common pleas in which the petition is filed may decree the district established, and the conservancy court is organized.

The conservancy court consists of the judges of the court of common pleas of each county included in whole or in part within the proposed district. A presiding judge is elected from the membership of the conservancy court. Action of the court is by majority vote of the judges constituting its membership. In case of a tie vote, the side with which the presiding judge votes is considered the majority. The court may appoint three of its members to act as an executive committee in conducting hearings, and making determinations and findings, under rules established by the court. However, action of the full conservancy court is necessary in the establishment, dissolution, or modification of the district; the adoption, rejection, or amendment of the official plan; the appointment and removal of directors and appraisers; the confirmation of the appraiser's report of benefits, damages, and appraisals of property; the authorization of maintenance assessments in excess of

⁵ OHIO REV. CODE ANN. c. 6101 (Page 1954).

one per cent of benefits; and the examination of the annual report of the board of directors.

A board of directors consisting of three persons, at least two of whom are resident freeholders, is appointed by the conservancy court for staggered terms of three years. The chairman of the board is elected from its members. The board of directors may employ a secretary, treasurer, chief engineer, and attorney, and such other staff as it deems necessary. The board of directors is responsible for directing the affairs of the district, subject to general policy direction and supervision of the conservancy court as described above. Specifically, the board of directors is responsible for preparing the official plan for the improvements for which the district was created; publishing and hearing objections to the official plan; adoption of the official plan; and recommending its adoption by the conservancy court. Provision is made for hearings before the conservancy court on any specific objections to the official plan as adopted by the board of directors. The board of directors is also responsible for constructing, maintaining, and operating all works or improvements necessary to complete, operate, and protect the official plan.

In carrying out these responsibilities, the board of directors is empowered to purchase or lease land and other property; exercise the dominant right of eminent domain over the rights of utility corporations; make and enforce rules and regulations primarily relating to the construction of bridges, sewers, roads, fences, etc.; contract with private individuals, private or public corporations, or the federal government for cooperation or assistance in constructing, maintaining, using, and operating the works of the district, or for making surveys and investigations or reports on the waters of the district; levy taxes and benefit-assessments; and issue bonds in anticipation of collections thereof.

It is important to note that the Conservancy Act originally was directed largely to the problem of flood control. Although irrigation "where needed" is listed among the general purposes, there is no reference to other beneficial uses, nor any recognition of land and water relationships in the watershed. Even with regard to irrigation, one section provides specifically that irrigation should in no way "... interfere with works for the prevention of floods, or the drainage of lands, or materially diminish their protective value."⁶ The principal intent of the original act was clear: to provide a public mechanism for controlling the excess water flow in stream channels.⁷ The MWCD was, however, to have a considerable influence upon broadening the purposes and authority of the Conservancy Act. These changes were made in 1937.

For many years, particularly following the 1913 flood, small local groups in the Muskingum basin had attempted to organize for action on their local flood-control

⁶ *Id.*, §6101.73.

⁷ Many associated with the effort to obtain state enabling legislation for conservancy districts, even before the flood of 1913, did not favor restricting the purposes of these districts to controlling excess stream flow. Had not the 1913 floods thrown the leadership for such legislation to the flood-conscious Miami Valley group, the Conservancy Act might originally have been more broadly conceived.

problems. Repeatedly, these individual efforts became dissipated. It was twenty years before the various localities and the various interests in the watershed became joined and the people of the region organized for a comprehensive approach to the basin's many interrelated problems.

The first systematic and sustained movement to organize the entire valley for flood protection had its roots in Zanesville in 1927. In this year, the Chamber of Commerce of Zanesville engaged Bryce C. Browning⁸ as its manager and revitalized its flood-control committee. That this action, unlike many earlier ones, should be sustained and should conceive a program of comprehensive water resources management, was attributable to a fortunate combination of events and personalities.

One of the first acts of the new flood-control committee of the Zanesville Chamber of Commerce was to engage Dr. Arthur E. Morgan's firm, the Dayton Morgan Engineering Company, to conduct a survey and recommend a plan for flood protection for the city of Zanesville. That survey was significant for two conclusions: first, that it was not economically possible to provide any acceptable degree of protection for the city alone; and second, that the only way to obtain effective flood control at Zanesville was to design a control system for the entire Muskingum drainage above the city. Comprehensive control for the whole river system depended upon the understanding and participation of the people in the upper watershed. Efforts on the part of the Zanesville people to interest upland communities seemed futile. Why should they be interested in flood control for the downstream cities? But other movements were in the making to keep the cause alive.

In 1927, forces in Marietta also began to gain strength in a campaign for concerted action on the Muskingum flood problem. George Maxwell, associated with the Marietta flood-control committee, was to have considerable influence on selling the concept of comprehensive watershed management to the people of the valley. Maxwell, on the basis of years of experience in western water problems, became dedicated to the idea of "source-stream control."⁹ Not only was he active in selling land treatment and small structures as a vital part of any Muskingum program, but he also worked tirelessly to influence national water policies in this direction. By the spring of 1930, Maxwell had joined forces with Bryce Browning in Zanesville, where he became executive director of a water and soil resources committee of the Zanesville Chamber of Commerce.

As though to set the stage for Maxwell's gospel in the upstream areas of the watershed, "Mother Nature," in the spring and summer of 1930, visited upon the Muskingum basin one of the worst droughts in its history. The farmers and the small communities in the upper reaches of the watershed no longer thought the water problem was merely a problem of the downstream cities. The upstream cities experienced serious water shortages, the flow of the river was not sufficient to maintain sanitary conditions, and it became evident that future industrial development might

⁸ Mr. Browning became one of the most influential leaders in the organization of the Muskingum program. He became the first Secretary-Treasurer of the MWCD, which position he still holds.

⁹ See GEORGE H. MAXWELL, *GOLDEN RIVERS AND TREASURE VALLEYS* (1929).

be limited unless steps were taken for water conservation. Mr. Maxwell was as much interested in water conservation as in flood control; to him they were inseparable parts of the same problem. Industries, villages, and cities then suffering from water shortages were eager to listen to Mr. Maxwell's proposals. As a result, there grew a realization of a "community of interest" between the upland areas and the river cities in water conservation and flood control.

Other forces for bringing the people of the valley together were coming into play about this time. Mr. Robert N. Wilkin, a practicing attorney in New Philadelphia, had been retained by a Dover steel company to investigate the possibility of making the Muskingum River navigable up to Dover and New Philadelphia, in order that the company might equalize its competitive position with other producers located on water transportation. Mr. Wilkin's investigation ultimately led him to Zanesville and to Bryce Browning. Another interest had thus been joined to the common cause.

The various emerging interests in the Muskingum development were called together in a meeting at New Philadelphia shortly after Maxwell joined the cause in the spring or early summer of 1930. Some sponsors of the meeting were primarily interested in navigation, some in water power, some in reforestation, and some in soil and water control in the headwaters; however, flood-control interests dominated. At this meeting, the Muskingum-Tuscarawas Improvement Association was organized, which, in effect, federated the various local promotional organizations already created. Robert N. Wilkin was elected president, and Bryce Browning became executive secretary of this new promotional organization.

The first and perhaps the most significant action of the new association was to arrange for the Ohio Department of Public Works to finance¹⁰

... a reconnaissance survey and investigation of the Muskingum and Tuscarawas Rivers with reference to flood control, navigation, water supply, power development, sanitation, and other incidental uses pertaining to the control and use of the waters of these two streams. . . .

The Department contracted with the Dayton Morgan Engineering Company to conduct the survey, the results of which were made available early in 1931. In general, the major significance of this second Morgan study was its finding that a comprehensive flood-control and water-conservation program for the entire drainage area was feasible but that it would probably cost over \$50,000,000, an expense greater than the watershed or the state could bear. It was further found that control of the Muskingum flood waters by such a system would have measurable effect in reducing flood crests and in improving navigation on the Ohio River, for which benefits there was a community of interest in other states and in the federal government.

Single-purpose development was declared by the report to be uneconomical, but it concluded that there was no substantial need for irrigation, that water-power

¹⁰ OHIO DEPT. OF PUBLIC WORKS, REPORT ON WATER RESOURCES OF THE MUSKINGUM DRAINAGE AREA 1 (1931).

development was uneconomical "at this time," and that the proposal for navigation up to Dover seemed unwarranted.¹¹ Stress was put upon flood control and water conservation, pointing out, in some detail, the rising demand for industrial and municipal water. Pollution abatement, reforestation, and soil-erosion control were also recommended.

In reviewing this second Morgan report, the Ohio Department of Public Works concluded that the state had considerable interest in the program proposed and should render substantial aid, but that it could not be the prime mover. In view of the large engineering enterprises being undertaken by the federal government at that time, the Morgan report had recommended that requests should be made for federal aid. However, no action was taken, and the whole Muskingum program was quiescent for nearly two years.

The progressive expansion of federal concern and responsibility for flood control during this period had important influences on the evolution of the Muskingum program. Perhaps no less an influence, however, was the fact that before the organization of forces in the Muskingum had crystallized, the nation was thrown into the great depression. The New Deal program to combat unemployment rapidly changed traditional concepts of the relative roles of state and federal governments, and new opportunities for action appeared.

The Muskingum group was one of the first to present a request for federal aid to the Public Works Administration established by President Roosevelt in 1933. Although the Muskingum representatives were given positive encouragement by PWA officials, they were advised that if the Muskingum project were approved, PWA would require some legally constituted local authority with which to contract for the execution and operation of the works. Plans were then accelerated for the establishment of a conservancy district under the Conservancy Act.

This was a critical point in the evolution of the Muskingum program. Two major issues arose. One was the extent of the financial liability which would be assumed by the people of the valley in creating a district; and the other, the question of how comprehensive the purposes of such a district should be. The judges before whom the petition for a district was heard were reluctant, in the face of a deepening depression, to take action which would saddle the locality with an additional tax burden. The decree establishing the Muskingum District was, therefore, made conditional upon obtaining federal financial assistance satisfactory to the conservancy court.

The second issue was raised by those who urged that the Muskingum District, in spite of dubious authority in the enabling act, should be conceived as a broad, comprehensive water resources management agency, and that the decree establishing it should state its purposes in the broadest terms, emphasizing beneficial uses of water

¹¹ Technological improvements in multiple-purpose engineering and changes in the economics of irrigation farming, energy, and transportation suggest the desirability of reviewing the feasibility of these services in planning further development in the Muskingum basin.

and collateral land-management measures. Others argued that the District should stick to the letter of the law and, like the Miami District, be restricted to water control. The latter, a small but vocal group, had the law on its side. But the former had the backing of reason and experience. When the decree was finally issued on June 3, 1933, it established the District as a "watershed conservancy district" instead of just a conservancy district as is true of most other instrumentalities established under the Conservancy Act. Furthermore, the decree provided that the MWCD would have as its purposes not only the water-control functions itemized in the Act, but also the "conserving of flood waters for beneficial uses," and the District was authorized to carry on such additional activities as "... forestation, the building of check dams and other control works to prevent soil erosion and the consequent clogging of stream channels."

There is no doubt that the court order creating the MWCD conceived the District's purposes much more broadly than those authorized in the Ohio enabling legislation. In fact, the District's officials had some concern about the legality of its operations and worked diligently with a state committee to codify the Conservancy Act and to recommend amendments. The recodified law, with amendments, was adopted April 17, 1937. These amendments, in general, authorize conservancy districts to include among their functions providing water for domestic, industrial, and water power purposes, pollution abatement, and the development of recreation facilities.

IV

A COMPREHENSIVE PROGRAM OR A RIVER CONTROL PROJECT?

With its legal basis established, the MWCD set out to prepare a comprehensive development plan in keeping with the breadth of its basic charter. Relying essentially on the findings of the second Morgan report, the District prepared a preliminary plan which was submitted to the PWA with an application for financial assistance in August 1933. This plan represented "... a coordinated and comprehensive program for flood control, conservation and development of water and other natural resources, river regulation, purification of streams, irrigation, prevention of soil erosion, and forestation."¹² The program proposed was estimated to cost \$53,640,000. Of this, \$42,925,000 was for retarding basins and reservoirs. The District asserted that the plan could not be executed by the people of the District alone without the financial cooperation of the federal government. The MWCD, therefore, proposed that,¹³

due to the direct benefits to governmental functions; to the contribution by the project to flood control on the Ohio and Mississippi Rivers; to improved navigation; and to the federal government's general responsibility to assist in works for the conservation of natural resources, flood control, and the restoration of agriculture and industry, the federal government ... grant the additional funds required to complete the project.

¹² MWCD, STATEMENT OF GENERAL PLAN AND PURPOSE 3 (1933).

¹³ *Id.* at 7.

Unfortunately, the PWA was interested only in the large engineering and construction components of the plan, particularly those having to do with flood control and navigation. The action of the PWA upon the application, which was expressed in the contract of March 6, 1934 between the MWCD and the United States, had far-reaching effects upon the character of the MWCD and its program. Three points regarding the provisions of this contract are significant to this study:

1. The PWA agreed to extend financial assistance on a project limited to the construction of some fourteen dams and reservoirs designed for flood control and water conservation. No part of its assistance could be used for land-improvement measures or for local flood-protection works.
2. Such a project was estimated to cost approximately \$34,000,000. The PWA agreed to provide \$22,000,000, while the District agreed to assume the costs of lands, easements, and relocations, as well as administrative and legal expenses, amounting to an estimated \$12,000,000. In addition, the District assumed the costs of operation and maintenance.

The state of Ohio subsequently agreed to provide one-half of the local share, through the provision of an estimated \$4,000,000 worth of highway relocations and \$2,000,000 in cash contribution to the cost of lands. This left the District with a total estimated liability of \$6,000,000, which it was to obtain through the special benefit assessment authorized by the Conservancy Act.

3. The PWA required that its grant to the project be administered by the Army Corps of Engineers and provided in the contract that the project should include fourteen reservoirs, the tentative location for each of which was given, or "such other reservoirs as may be agreed upon by the Conservancy District and the Corps of Engineers."

These provisions of the PWA contract were a major set-back to MWCD aspirations for a locally-directed comprehensive watershed program. The PWA's refusal to finance soil-conservation measures, forestation, and related works for source-stream control left these upstream features of the comprehensive program without financial assistance and started a general fragmentation of the comprehensive program. The PWA was adamant in its refusal to participate in these features and could only suggest that the District seek assistance in this phase of its program from other federal agencies. Likewise, by restricting assistance to only dams and reservoirs, even integrated planning of flood control was made difficult. Such local protection works as seemed desirable had to be financed by some means other than that provided in the project. However, since the dam and reservoir project had already committed the full financial capacity of the people, necessary local protection works had to be postponed to some uncertain future. The necessity to plan the reservoir system when the exact character and timing of the nonreservoir features were unknown compromised the achievement of a truly integrated flood-control scheme.

In many ways, the new role which was assigned to the Corps of Engineers in the

Muskingum project may have compromised the aspirations of the MWCD as much as the limitations attached to the grant. What was the justification for injecting another federal agency into the project? Some contend that it was a bone tossed to the Army Engineers after they had been deposed from the Tennessee River by President Roosevelt's promotion of the TVA. However, PWA officials insisted that the Corps of Engineers' participation was necessary because the grant was large relative to others being made to local units of government and because a large share of the flood-control benefits was to accrue on the Ohio River, outside the jurisdiction of the MWCD.

Both factors may well have influenced the decision. Under the circumstances of its denial of a part in the Tennessee development, it is entirely possible the Corps's participation in the Muskingum was a *quid pro quo*. However, the PWA's justification for the Army engineers supervising the Muskingum project is of even greater significance to this study. Here we see an expression of the pressures of political realities in a development program of this kind. Where benefits extend beyond the jurisdiction of the local agency and where costs are borne by a higher level of government, the broader jurisdiction demands a share in the responsibility for the development.

The Muskingum River control system, authorized by the "Project and Official Plan" agreed upon between the District and the Corps of Engineers, consists of fourteen reservoirs, ten of which maintain a permanent water pool. The river control system is designed, in so far as practicable, to provide an effective distribution of both flood-control and water-conservation features throughout the basin. It provides 1,327,800 acre-feet of flood-control storage and 211,400 acre-feet of water-conservation storage, so located as to control over 62.4 per cent of the basin above Zanesville and 70.7 per cent of the basin above Coshocton. The system as a whole contains flood-control storage thirty-six per cent greater than would have been required in the 1913 flood, and thirteen per cent greater than would have been required had the 1913 storm been centered over the Muskingum basin. The ten permanent conservation pools provide 16,380 surface acres of water in a section of Ohio plagued by a dearth of natural lakes. These reservoirs are operated to maintain minimum flows equal to the mean flows that existed prior to their construction.

Clearly, the Muskingum River control project, made possible by the PWA grant, fell far short of the comprehensive program for land and water management which the MWCD had envisioned. New patterns of federal, state, and district relations were developed in an effort to provide the related land-water conservation aspects of the original comprehensive plan. At the same time, adjustments in financial relations between the federal government, the state, and the District were necessary during the course of project construction. These changes in intergovernmental relations induced significant shifts in the role of the MWCD as a drainage basin development agency. The remaining parts of this paper are devoted to a descriptive

analysis of these changes and their impact upon the MWCD as a local agency of drainage basin development.

V

FINANCING THE RIVER CONTROL PROJECT

Plans for financing the Muskingum River control system required many changes throughout the course of construction, particularly during the four-year period from the final approval of the "Project and Official Plan" in 1935 to the passage of the federal Flood Control Act of 1939.¹⁴ Basically, shifts in the financing arrangements for the project resulted from complex interactions between two fundamental factors: first, the natural reluctance of the people of the valley to assume additional tax burdens in the deepening depression; and second, shifting federal policies relating to the role of the national government in all phases of natural resources management generally, and in flood-control projects in particular.

Financial problems arose almost before final approval of the "Project and Official Plan." It became evident that both construction and land acquisition costs would be higher than estimated. This seriously upset the budgets both of the Corps of Engineers, which was responsible for construction, and of the District, which was responsible for purchasing the necessary land, flowage easements, and rights-of-way.

In March 1936, approximately one year after approval of the "Project and Official Plan," the Corps was granted an additional \$3,500,000 for construction purposes. A major part of the justification for this additional grant was based upon the increased construction costs owing to the changes in plans for meeting the local flood situation at Massillon.¹⁵ How much was attributable to this change in the "Project and Official Plan" and how much to original underestimates is not a matter of record.

Financial relief for the District presented greater problems. Under the original plan for financing, the MWCD had assumed the cost of land acquisition, administration, and legal services to the extent of \$6,000,000. In March 1937, with about one-half of the land acquisition completed, the District estimated that the cost of lands, easements, and rights-of-way alone would amount to over \$6,000,000. Relief from the rising obligation of the District became imperative.

On June 27, 1937, the MWCD was awarded an additional grant of \$1,600,000 from the PWA to reimburse the District for increased cost of lands. In return, the MWCD transferred to the United States title to the lands necessary for the dams. The District's justification for federal assistance in land acquisition was based upon the claim that land costs were higher than expected because: (1) the relocation of certain dams by the Corps of Engineers in order to increase federal benefits in the Ohio Valley had involved higher-value lands; and (2) the emphasis upon acceleration of the work in order to relieve unemployment had resulted in construction starting

¹⁴ 53 STAT. 1414, 33 U. S. C. §701 (1952).

¹⁵ Although the original PWA contract prohibited the inclusion of local protection works as a part of the project, an amendment to the contract was negotiated to include the Massillon project as a special case.

before land purchase negotiations were initiated. Furthermore, the District contended that because relief measures and employment opportunities on the project had not resulted in the economic relief anticipated, property owners were still without adequate means to pay their assessments.

Changes in federal policy, particularly regarding the national government's role in flood control, had far-reaching impact upon the Muskingum situation. The Flood Control Act of 1936 had accepted a federal responsibility to provide flood protection where benefits, to whomsoever they may accrue, exceed costs.¹⁶ Local interests were required to provide lands, easements, and rights-of-way, just as was required by the Muskingum contract. However, unlike the Muskingum contract, the act did not require local interests to assume the costs of operating and maintaining the dams and reservoirs. And in the 1937 amendments to the Flood Control Act, the President was empowered to waive, up to fifty per cent, even the requirements for local participation in land acquisition if the locality were unable to pay "by reason of its financial condition."¹⁷ It is not surprising, therefore, that the Muskingum people increasingly compared these national developments with "their deal," and as federal policy provided more favorable terms for the same services elsewhere, voices in the Muskingum were raised in support of any effort to receive equally favorable treatment.

In spite of its additional grant in 1937, the MWCD in early 1938 estimated its remaining obligations to be approximately \$7,000,000, to be paid in large part by the owners of approximately 24,000 properties who would receive flood-control benefits. On the basis of benefits appraised, the board of directors levied a fifty per cent assessment, amounting to \$5,800,000. The Conservancy Act authorized the issuance of bonds against ninety per cent of the unappealed assessments. With unappealed assessments of \$4,247,000, the board of directors, on May 1, 1938, therefore, authorized the issuance of bonds in the amount of \$3,822,000 against anticipated assessment collections. This action established the basis for the financial operations of the District.

With the announcement of the first semiannual assessment collection early in 1938, protests of property owners to assessment levies mounted. In most areas, protest movements soon dwindled and the assessment installment was paid. In the city of Newcomerstown, however, protests reached crisis proportions. Here, certain interests felt that benefit assessments fell with disproportionate severity upon their properties. Fired by the local press and supported by one of Ohio's senators, this protest movement turned into a local "tax-strike," since, by law, these assessments were made an integral part of the property tax. A large portion of Newcomerstown taxpayers were in default, and the schools and city services were threatened with insufficient funds on which to operate. Local opinion began to develop that the federal government would be willing to take over and run the project if the District

¹⁶ 49 STAT. 1570, 33 U. S. C. §701a (1952).

¹⁷ 50 STAT. 877.

would dissolve. The issue came to a head when the residents of Newcomerstown passed a resolution reminiscent of early colonial days, saying:¹⁸

Be it resolved by the citizens and taxpayers of the Village of Newcomerstown in Convention Assembled: That we tender payment of our taxes and assessments exclusive of the said Muskingum Watershed Conservancy District taxes and assessments, and, if the same be refused by the tax collecting authorities, then and in such event, we declare our intent, as did our forefathers when unjustly taxed by the Tyrannical King George III of England, to pay no tax assessments until such time as we may be relieved of the unbearable burden of such watershed assessments.

Be it further resolved, That we believe that the only just and possible solution of the present condition is for such Conservancy District to be deeded in its entirety to the United States Government to be by it paid for and operated under the general Flood Control Laws of the Country; to be under the complete control of such government as its sole expense for construction and operation.

Efforts were made to enjoy the benefit assessment collection in order that "legitimate taxes" could be paid. Legal battles ensued, and on October 11, 1939, the court approved the MWCD's request for dismissal of an order restraining collection of the District's assessments. The MWCD had won its legal right to collect the assessments levied. However, in spite of the remarkably good assessment collections elsewhere in the District¹⁹ and in spite of the evidence that the Newcomerstown "tax strike" was a locally exaggerated situation, it seems clear that the Newcomerstown protest reflected a significant attitude throughout the basin with which the MWCD was forced to reckon.

This question the District could not escape: Why should the people of the Muskingum Valley contribute more to their flood-control protection than was now required of other areas which had shown no initiative in facing up to their flood problems? Subsequent events indicate that the need to obtain further relief from its financial commitments dominated the future efforts of the MWCD.

The Flood Control Act of 1938²⁰ affected the Muskingum significantly. This act further liberalized federal flood-control policy by providing, in effect, that local units of government were relieved of all responsibility for acquiring lands, easements, and rights-of-way and for operating and maintaining those projects authorized in the 1938 act or previously authorized by the Flood Control Acts of 1936 and 1937. In addition, section four of the 1938 act was significant to the Muskingum project in two specific respects: (1) it authorized and directed the Secretary of War to reimburse the MWCD, not to exceed actual expenditures made by the MWCD for acquiring lands, easements, and rights-of-way, and not to exceed \$4,500,000; and, (2) in authorizing additional works in the Ohio basin, it included seven new projects for the Muskingum, three of which were additional reservoirs, and four of which

¹⁸ Newcomerstown News, Dec. 15, 1938, p. 1.

¹⁹ Of the 24,000 properties on which assessments were levied, appeals to appraisals were received on about 20% of the properties, amounting to about 27% of the appraised value. By the time the first semiannual levy became due in December 1938, only 887 appeals remained outstanding.

²⁰ 52 STAT. 1215, 33 U. S. C. §§701, 702, 706 (1952).

were local protection works, originally prohibited from the basin project by the terms of the PWA grant.

Since the Muskingum project was not specifically authorized by Congress in the Flood Control Acts of 1936 or 1937, the general policy changes regarding local financing contained in the 1938 act did not fully apply to the original Muskingum project, and the people of the valley, again, did not share equally in the favors of the federal government. For, while section four of the 1938 act provided specific reimbursement to the MWCD for the cost of lands, easements, and rights-of-way,²¹ it did not cover the administrative costs of acquisition, nor did it relieve the District of the responsibility for maintaining and operating the project.

In spite of the considerable relief promised the Muskingum District by the reimbursement authorized by the 1938 act, it was clear that the Muskingum Valley was still not as favored by the federal government as those areas which had waited for the Congress to bring them free flood protection. This fact continued to fire the objectors to the MWCD assessments and induced the district officials to a policy of avoiding further assessment collections if possible.

The question of how much the Muskingum project should continue to be a responsibility of the Muskingum people dominated MWCD policy deliberations and public controversy in the region through 1938 and early 1939. Receipt by the District of the reimbursements authorized by the Flood Control Act of 1938 would have relieved the MWCD of the immediate necessity to collect further benefit assessments in order to meet bond service requirements. However, the Corps of Engineers appeared to be delaying the reimbursements provided by law, and the need for further assessment collections threatened. Such threats sharpened local protests and made local opinion more amenable to further federal control. Perhaps the delay by the Corps of Engineers in making reimbursement payments was related to the Corps's hopes that time would demonstrate the desirability of it taking over the entire flood-control operation of the Muskingum project. Preliminary discussions were held regarding the kind of transfer arrangements that might be worked out between the District and the Corps. The MWCD's board of directors was split two to one in favor of cooperating in the transfer of its flood-control project to the Corps of Engineers.²²

This was a critical juncture in the development of the MWCD and its program of drainage basin development. If the Corps of Engineers took over the entire project for flood control, how could the other purposes for which the project was originally conceived still be achieved? The Corps had authority for flood control but no authority relating to beneficial uses of the conservation storage nor authority for forestation or recreation. On the other hand, sentiment was strong to make such

²¹ MWCD, SUMMARY STATEMENT FOR LANDS, EASEMENTS, AND RIGHTS-OF-WAY AS OF MARCH 11, 1937 (1937) estimated the total cost of these items at \$6,253,000. The grant of \$1,600,000 would have reduced the MWCD investment to about \$4,600,000. It would appear, therefore, that the \$4,500,000 reimbursement authorized in the 1938 act was intended to be full reimbursement for land costs.

²² Letter from Bryce Browning to the author, June 21, 1955.

arrangements as were necessary to obtain for the Muskingum the full benefits of federal flood-control policy. It appears that the flood-control purposes of the Muskingum project had become so dominant in the minds of the residents, and even the board of directors, that the dilemma with which they were confronted seemed not particularly significant. Dams and reservoirs meant flood control; these they had; if they could sell them to the Corps at cost, the valley would gain flood control at the minimal cost of the first semiannual installment of benefit assessments. This seemed like a deal too good to turn down. Negotiations were under way in Washington to obtain a provision in the then pending Flood Control Act of 1939 to transfer the entire flood-control operations of the Muskingum project to the Corps of Engineers. Events were moving fast. A few leaders, however, maintained their vision of the broader purposes and benefits of the potential developments in the valley, and continued to resist a complete capitulation.

On August 11, 1939, the Flood Control Act of 1939 became law. As finally passed, section four of the act provided the following with respect to the Muskingum project:

1. The Muskingum River dams and reservoirs were included as part of the flood-control plan for the Ohio River basin authorized by the Flood Control Act of 1938, and, thereby, the Muskingum project qualified under the general policy of the Flood Control Act of 1938, which eliminated all requirements for local financial participation.
2. Reimbursements to the MWCD were authorized to include, in addition to payments made to landowners for the acquisition of lands, easements, and rights-of-way, as authorized in the 1938 act, the reasonable expenses of acquiring lands, easements, and rights-of-way heretofore transferred to the United States. All reimbursements were to be made for those expenditures "deemed reasonable" by the Secretary of War and the Chief of Engineers.
3. The Secretary of War was authorized to pay "forthwith on the passage of the Act" the sum of \$1,500,000 on verification that reimbursable expenditures of that amount had been made by the MWCD and on agreement by the District that it would proceed immediately to transfer any assets acquired through such expenditures.
4. The MWCD was "... relieved of any obligation to maintain and operate the dams."

Clearly, the Flood Control Act of 1939 transferred the entire flood-control operation of the Muskingum project to the Corps of Engineers. The people of the Muskingum Valley had obtained the same advantages from the federal flood-control policies as were available to the people of any other valley. It appeared, moreover, that the intent of the Newcomerstown Resolution had been realized—namely, to deed the District "... in its entirety to the United States Government to be by it paid for and operated under the general Flood Control laws of the Country. . . ."²³

However, the 1939 act left the MWCD with two major problems: first, clarifying its position regarding its title to the reservoir properties; and, second, negotiating a

²³ *Supra* note 18.

definitive financial settlement with the Corps of Engineers, including the amount, timing, and manner of reimbursement authorized by the Flood Control Acts of 1938 and 1939. Both of these problems became major ones as a result of the ambiguities of the 1939 act. Both had been raised during the drafting of that act, and the clarification of each had been left for future negotiation. Had the various groups within the Muskingum been of greater singleness of mind and purpose regarding the transfer to the Corps of Engineers, many of these ambiguities probably could have been avoided.

The question of the extent to which the MWCD could legally divest itself of title to reservoir lands had been argued in Washington. With the passage of the act, the question was directed to the Ohio Attorney General who returned his opinion on February 6, 1940.²⁴ In it, he concluded that the District did not have the authority to dispose of all its lands in fee simple. The opinion pointed out that if the District were to transfer all its land to the federal government, the District²⁵

... would then be without purpose; it would not have the facilities with which to carry out its other purposes of water conservation, soil erosion prevention, forestation, the development of recreational facilities thereon, as contemplated in its adopted plan. Its possible function would necessarily cease except for the collection of funds through assessment and otherwise for the payment of its bonds.

The Attorney General made it clear, however, that he did not rule against agreements with the federal government by which it might construct and maintain flood-control projects, nor against conveying to the United States an interest in the property of the MWCD for flood-control purposes. The legality of either action would depend upon the District retaining such property rights as are "... necessary for it to exercise and complete its purposes other than that performed by the Federal Government."²⁶ This led the way to a final agreement with the Corps of Engineers by which the MWCD assigned to the federal government flowage easements over those district lands required for flood-control operations, while the District maintained title and control to the reservoir properties for all purposes other than flood control. Consequently, since that time, the MWCD's activities have increasingly concentrated on problems of reservoir properties management.

The reimbursement problem arising from the Flood Control Act of 1939 has, in many ways, been a malignancy to the District. With the passage of the act, the people in the valley generally believed that they were assured of no further assessment collections. Yet, the timing and quantity of reimbursement payments were at the discretion of the Corps of Engineers. Under such circumstances, the MWCD was never able to develop any systematic plan for meeting its bond obligations. Delays in reimbursement payments frequently threatened the MWCD with the necessity of collecting additional assessment levies, but at the last minute, the Corps would come through, just in time to save the District such public embarrassment. As a result,

²⁴ 1 OPS. ATT'Y GEN. OHIO 123 (1940).

²⁵ *Id.* at 131.

²⁶ *Id.* at 132.

the MWCD has been kept "over the barrel" for many years. Not until October 1955, when a final settlement consummated fifteen years of negotiation, was the spectre of another assessment collection finally removed from the MWCD's operations. This settlement now assures the District that it will be able to liquidate its bonds when they became callable in 1958, without further assessment collections. This means that the first semiannual levy which was collected in 1938 essentially constitutes the total local financial contribution to the dam and reservoir system. This contribution amounts to about \$800,000 out of the total project cost which probably exceeded \$50,000,000.

The four years from time of final approval of the "Project and Official Plan" to the passage of the Flood Control Act of 1939 spawned several actions that had far-reaching effects upon the MWCD. First, it is clear that these events resulted in the federal government, and to a lesser extent the state, assuming an increased proportion—almost to the point of 100 per cent—of the project costs. The action in 1939 removed almost the last pretense of local participation, at least in the flood-control aspects.

A second product of shifting financial arrangements was the somewhat uncertain status regarding the District's and the state's investment in the water-conservation features of the project. By virtue of the opinion of the state's Attorney General, the District retains title to some 65,000 acres of land and water which constitute the reservoir properties. The MWCD conducts activities involving the development of these properties for forestry and recreation and their leasing for farming and minerals exploitation. These programs are claimed to be self-supporting; yet, in their operations, no charges are made to amortization of the capital investment in the reservoirs themselves. Does the contribution of \$800,000 by the District plus perhaps \$6,000,000 to \$8,000,000 contribution by the state represent an adequate share in the costs of the capital facilities? Probably this question can never satisfactorily be answered without a cost allocation analysis of the existing reservoirs to serve as the basis for determining the share of total costs assignable to flood control and to water conservation.

Third, the events of this period, particularly the obvious protests against assessments, forced the MWCD, in initiating its reservoir-management activities, to assure the people of the valley that these functions could be "self-supporting." Recreation services, forest-management actions, and other services from the water-conservation pools which do not offer a break-even possibility have been less attractive and often disregarded in the MWCD reservoir property management.

VI

THE MWCD'S CHANGING ROLE

There is little doubt that the Muskingum program, as originally conceived in the preliminary plan presented to the PWA in 1933, was unique for its day. It was unique both in terms of its comprehensiveness and in terms of the character and extent of local participation it assumed. Today, however, it is obvious that the

MWCD has had to compromise the integrity of the unified comprehensive plan which it conceived, as well as its role in drainage basin development in the Muskingum. These compromises were induced by the interwoven chain of events and circumstances with which the District was confronted in the two decades or more of its existence. The most significant of these have been described and analyzed above. Through this progression of compromises, the MWCD has played several distinct roles with regard to the development and management of the land and water resources in the Muskingum basin.

At first, the District assumed that it would perform as an independent local agency in the administration of its proposed comprehensive development program for the basin. Even though it sought federal financial assistance, it seems clear that it presumed a free hand in its administration, subject to PWA approval of policies and plans. It was with real consternation that the MWCD officials, on the last day before contract approval with the PWA, learned that the Corps of Engineers was to be responsible for the administration of the federal grant.²⁷ From the very first, then, the District's independence was violated. From the perspective of 1957, it may appear that the MWCD's assumptions in this regard were somewhat naïve. Sound policy and administration may always require a degree of federal participation wherever federal appropriations are utilized. In this case, where the MWCD justified federal participation on the basis of flood-control benefits extending to the Ohio River, a case certainly existed for the Corps to be assigned technical supervision. Following contract approval, the District's independence progressively diminished with the successive changes in financial arrangements which finally culminated in the provisions of the Flood Control Act of 1939 and the administrative negotiations involved in obtaining reimbursements authorized therein.

The PWA action upon the District's application for financial assistance not only violated the MWCD's independence, but, by approving only the river control system, the PWA, in effect, broke up the District's comprehensive watershed plan. This forced the MWCD to take a fragmentary approach to achieving the land-water aspects of its comprehensive plan and led the District into a second type of role—that of a local, unofficial coordinating agency. By 1938, this role was being emphasized by the District.²⁸

Eager to get erosion-control and reforestation work started throughout the watershed, the MWCD's efforts were directed to the development of cooperative programs with various federal agencies which could help in these and related activities. The Works Progress Administration (WPA), the Civilian Conservation Corps (CCC), and the National Youth Administration (NYA), as well as the newly created Soil Erosion Service (later the Soil Conservation Service) and such established agencies as the National Park Service and Forest Service all contributed immeasurably to advancing various phases of land and water management in the Muskingum basin.

²⁷ Interview with Judge Robert N. Wilkin, Washington, D. C., Dec. 9, 1954.

²⁸ See MWCD, *WORKING TOGETHER IN THE MUSKINGUM VALLEY* 26 (n.d., but reported to have been published in 1938 or 1939).

The extent and nature of the participation of various federal agencies under their several emergency authorities were influenced in large measure by the MWCD. Petitioning for projects, suggesting locations of need, aiding in establishing necessary local arrangements, offering small financial contributions to cost, arranging local gifts of land, and assuring permanent operation and maintenance were all devices used in one situation or another to attract to the Muskingum Valley what has generally been recognized as a greater than its proportionate share of federal emergency projects dealing with land and water management.

In this kind of operation, the MWCD played an increasingly significant coordinating role, in which its effectiveness stemmed from three features which it then possessed.

First, the MWCD held a position of leadership among the people of the basin with respect to their watershed problems which it had inherited as a product of the predistrict programs of public education in watershed problems, potentialities, and needs. The work of Browning and Maxwell in Zanesville and later the work of the Muskingum-Tuscarawas Improvement Association had developed a "community consciousness" within the basin, the leadership for which was passed on to the MWCD when it was established in 1933. This devolved upon the District the authority and power of enlightened community interest and made the MWCD the administrative focus with respect to watershed problems. This kind of "authority," when properly utilized, is not lightly dismissed by state or federal agencies.

A second feature which strengthened the District as a coordinator was the fact that it had a comprehensive plan for the management of the land and water resources of the basin which was locally developed and supported. Although this original "general plan" was never officially approved, it had wide public support throughout the basin. Moreover, it provided a framework within which the District could request further assistance from the various agencies and from which each agency could see its contribution to the over-all basin's objectives.

More specifically, the legal status of the "Project and Official Plan" for the river control system has given the MWCD a powerful implement of coordination. The official plan has been effective both with the Corps of Engineers, regarding reservoir operations, and with other agencies whose programs relate to the management of reservoir properties. There have been occasions when the Corps has sought to operate the Muskingum reservoirs so as to change stream flow or to provide a greater degree of flood control on the Ohio than that provided by the plan. When these operations have threatened to change reservoir levels from those provided in the plan, thus jeopardizing other benefits, the District has been able to cite the Corps as being in violation of contracts of which the maintenance of reservoir levels, as provided for in the "Project and Official Plan" is a part. Likewise, contractual agreements with the Ohio Division of Wildlife for the fish and game management on the reservoir properties include provisions protecting the integrity of the MWCD's official plan. These have served effectively in keeping the work of this state agency

coordinated with the over-all program for the management of the reservoir properties.

A final and fundamental factor in the MWCD's effectiveness as a coordinator was its ability to raise local funds in support of the drainage basin development program. Without the ability to assume even the limited financial obligations which it did, it would have had little participation in the "Project and Official Plan." Furthermore, there are indications that many of the ancillary land-development programs were induced in the Muskingum area rather than elsewhere because of the District's ability and willingness to contribute land or cash. Even a small amount of local financial participation apparently bought a lot of "say" in how state and federal agencies conducted their programs in the area.

That the MWCD once played an effective role as coordinator based upon these three essential features of its situation is an important point in this study. Of equal significance, however, are (1) the fact that it gradually has lost its coordinating role, and (2) the factors which contributed to this deterioration in its position.

As the Muskingum people reneged on their financial participation, the District's effectiveness in basin-wide problems diminished. Forced to fight a rearguard action on financial matters, the MWCD's efforts were dissipated. The job of analyzing the basin's land and water problems, following the progress in their solution, and pointing the way to better action, got little attention from the MWCD. Its failure to keep up on basin-wide problems led to its loss of leadership in the watershed community and weakened the District's voice among agencies.

It seems clear that the immediate aftermath of the Flood Control Act of 1939 left the MWCD with a new but greatly limited role. It no longer possessed a favorable posture for effective coordination. Instead, it now retreated to the position of manager of the reservoir properties. The forces which had already been at play in vitiating the District's broader role continued, and new ones were added. Federal and state governments took on expanded responsibilities regarding land and water, with little attention to their impact upon a local watershed agency. Two cases may be described here as examples. Emergency soil-erosion-control work became a permanent federal program under Soil Conservation Service, to be administered through local soil conservation districts. Although the MWCD extended its full effort in support of Ohio enabling legislation and in encouraging the establishment of districts in the Muskingum drainage, today the MWCD, as an agency, knows little of the progress or problems of soil conservation throughout the watershed. It would appear that the administrative organization under which Soil Conservation Service operates discourages the MWCD from maintaining a watershed orientation with regard to soil conservation. For example, soil-conservation districts are set up on a county basis, without regard to subdrainages within the valley; and the SCS administrative supervision of the work in the basin is divided between two area conservationists, each of whose areas includes parts of other basins. A second example of the impact of federal and state expansions on the MWCD is found in the case

of water pollution. Here, the assumption by both Ohio and the federal government of pollution-control responsibilities and the creation of the Ohio River Sanitation Commission has permitted the MWCD to withdraw also from pollution matters in deference to higher levels of government.

But a factor of greater force in narrowing the MWCD's role to that of reservoir property manager was internal rather than external. Those same forces which urged the MWCD to turn flood control over to the Corps of Engineers urged the MWCD's board of directors to adopt an unwritten policy of "self-support" with regard to the District's reservoir property management. Today the District boasts of being self-supporting. Too often this claim is not understood for what it is—namely, that the District's operation of forestry, recreation, and farm and mineral leasing on the 65,000 acres to which it still holds title returns sufficient revenue to meet current operating expenses plus servicing recreation bonds which were sold to finance capital improvements required for recreation developments. Such a claim gives no consideration to a proper cost allocation with respect to the \$50,000,000 investment in the dams and reservoirs and an appropriate amortization charge with respect thereto. This "self-support" policy, moreover, has removed from the MWCD practically all concepts of a public service agency, except as its services can pay their way from collectible revenues.

The "self-support" policy has, in effect, given to the MWCD many of the colorations of a private rather than a public enterprise. Recreation services and forestry activities which have little prospect of being self-supporting are given scant attention. Although as a public corporation, the MWCD is exempt from property tax, the District insists upon paying tax to the local subdivisions of government in which its properties are located, without regard to the benefits derived by the local subdivisions from the District's operation. Similarly, the District has taken the position that, in order to avoid the criticism of subsidy, it should continue to purchase its tree seedlings for reforestation, even if planting stock were made available free of charge from other public agencies.

Nevertheless, the MWCD's programs in forestry and recreation on its reservoir properties are, without doubt, outstanding examples of multiple-purpose conservation management. Its accomplishments in these programs fully justify its reputation as an "impressive demonstration of what can be accomplished by local conservation initiative, leadership and cooperation."²⁰ However, it is important to distinguish these reservoir-management activities from a vital basin-wide program of land and water development.

VII

THE FUTURE OF THE SMALL DRAINAGE BASIN DEVELOPMENT AGENCY

In spite of the MWCD's failure to maintain itself as an independent local agency for drainage basin development, it did play a significant role in the Muskingum de-

²⁰ Butler, *The People Take Over in Muskingum Valley*, American Forests, July 1949, p. 48.

velopment. Its experience in the various roles it has played suggests the contribution which an agency of this kind can make in the complex environment of federal, state, and local governmental relations which characterize drainage basin development and watershed management today.

It is clear that programs even of the size of the Muskingum's involve both geographic and governmental jurisdictions which are larger than that of a local drainage basin agency, such as the MWCD. For one thing, any significant development in an area of this size involves works the costs of which usually exceed the financial capacity of the locality. Moreover, where benefits extend beyond the basin, as they inevitably do, some larger jurisdiction is appropriately involved. In the case of the MWCD, this might have been a federal or interstate Ohio Valley Authority; but lacking that, functional agencies of the federal government became involved. Inescapably, a larger jurisdiction which is able to identify sufficient benefits in local developments to justify its financial participation must ultimately also share the decisions in some proportion to its share of costs. Thus, a program of the scope of the MWCD's cannot be independently planned and executed by a local agency.

Moreover, not only is local independence impossible, it is undesirable. In fact, independent operation by any level of government in drainage basin development is undesirable. Total and comprehensive drainage basin development will always demand the full contribution of each level of government. This suggests that the problem is not so much one of demarcating functions or areas within which each governmental agency can operate relatively independently, but rather one of devising organizational machinery which will facilitate the contribution of all governmental levels to the common endeavor.

Although it is clear that a local agency, such as the MWCD, cannot, and should not, operate independently, there is evidence that it can contribute significantly, and perhaps more effectively than the MWCD is now able to do, to the comprehensive development of its basin.

Much of the deterioration in the MWCD's leadership came as a result of two forces: (1) the District's withdrawal from its cost-sharing commitment, and (2) the disregard by federal policies and programs of state and local participation. Although the MWCD was forced to renege on the major part of its cost-sharing obligation, this was owing to forces which may not be operative, or at least not as compelling, today. Without doubt, the depression was a major factor in the MWCD's withdrawal from its cost-sharing contract. Not only was the financial capacity of the local units of government progressively declining, but as a concomitant, the progressive liberalization of policy regarding federal financing of drainage development projects melted the local spine. At the same time, explosive expansions of federal programs relating to land and water development gave little consideration to the possible contributions which local units of government—much less local watershed agencies—could render.

Today, three factors tend to mitigate the negative influences which the MWCD experienced in its efforts to maintain a significant role in the development program.

Now, instead of depression, the economy is enjoying a vitality undreamed of in pre-depression days. Circumstances are now much more favorable for local authorities to levy taxes and benefit assessments appropriate to local sharing in drainage basin development. Secondly, federal and state agencies are now seeking a *modus vivendi* among each other and with local units. In the two-and-a-half decades since the early New Deal expansions, many different methods of intergovernmental relations have been tested. Both desire and knowledge with respect to local participation in land and water management are greater today. Lastly, the problems of land and water management are becoming more pressing, and the potentialities of rational comprehensive development are becoming more evident. As localities begin to face up to the limits of their areas in terms of water and land-water relationships, the environment is further favorably conditioned for effective local participation in drainage basin development.

If these assumptions are accepted, the question may then be posed: "What are the essential elements to effective participation by a small drainage basin agency in a development program for its basin?" The MWCD's experience suggests three important functions which such an agency may perform.

Fundamental to a comprehensive basin development program is local support. Here, the local drainage basin agency can make a primary contribution in providing leadership. Such support can only result from comprehensive public education of the watershed community with respect to the interrelated character of the land and water problems, potentialities, and courses of action. In turn, a public education program, if it is to be respected and sustained, must be built upon continuing surveys and research into basin-wide problems and possibilities. Here, then, the local agency's contribution is the holistic view. Rather than confining its efforts to conducting technical surveys, more appropriately the function of existing governmental or private agencies, the local agency should relate such piecemeal technical studies to the total drainage-basin problem. If such basin-wide studies support an active program of public education and participation, the local agency can perform effectively as leader and spokesman for the valley community.

Closely related to leadership is the function of unofficially coordinating the activities within the basin which may affect land and water development. Effectiveness in this role is dependent not only on the local agency's leadership status, but upon the possession of a tangible and dynamic plan of development. Such a plan must be under constant evolution based upon close consultation with private and public agencies concerned. In many respects, such a plan is the technical and political expression of the result of the agency's basin-wide surveys. And just as the plan will strengthen the local agency as a leader in the watershed community, it will also strengthen its coordinating influence among federal and state agencies working in the basin.

Finally, if a local drainage-basin agency is to participate effectively in the development program in its basin, it must serve as the vehicle for local cost-sharing. It

can, if established as a corporate subdivision of the state, as are the Ohio conservancy districts, possess the power of state and local assessment to capture benefit payments which otherwise may legally be difficult to collect. A greater return from direct local beneficiaries is sound policy for the future. It reduces the ultimate load on the general taxpayer, it encourages greater local responsibility, and, because of a fairer distribution of costs, it provides a more favorable basis for federal participation in drainage basin development.

Whatever the future direction of federal, state, and interstate cooperation in drainage basin development, a local agency based upon a watershed jurisdiction and prepared to perform in these general areas has a vital place in sound drainage basin development.

THE SMALL WATERSHED PROGRAM

ROBERT J. MORGAN*

I

THE NATURE OF THE PROBLEM

The avowed purpose of the Department of Agriculture's small watershed program is to conserve water by retaining a maximum amount of it on the land where it falls and to retard agricultural damages caused by run-off in a watershed—the land area which contributes to the flow of a stream. A secondary objective claimed by the Department is to complement mainstream works, such as large dams, levees, and dredged channels, by restricting the flow of water during periods of maximum run-off and reducing sedimentation and excessive siltation of the beds of reservoirs and streams. In short, the Department has visualized this program as a part of flood control as well as a foundation for stabilized agricultural production, especially in areas subject to alternating drought and floods, such as the Missouri basin.¹

The program requires two related types of construction—flood-control works and land-treatment measures. The latter ("B" measures) include such soil-conservation measures as terracing, contour plowing, grade control, and crop management, which have been soil-conservation practices for many years. The flood-prevention structures ("A" measures) are small "wet" or "dry" dams, intended either to create permanent pools or to reduce streamflow during heavy rains, gully-control structures, floodways, bank-protection works, and channel improvements. In order that flood-prevention works may be constructed, the land-treatment measures must be at least fifty per cent completed in a watershed. Although primary emphasis is placed on these two complementary phases of the program (with special need for accelerating land-treatment measures), present legislation also authorizes construction related to municipal and industrial water supply, stream-flow regulation, irrigation, drainage, and agricultural water management.

II

THE HOPE-AIKEN ACT

A. Nature of the Program

The principal authorization for the program is the Watershed Protection and

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¹ See 1 U. S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, TASK FORCE REPORT ON WATER RESOURCES AND POWER 195-96 (1955); 2 *id.* at 740-41, 776-86; 1 PRESIDENT'S WATER RESOURCES POLICY COMM'N, REPORT 123-40 (1950); U. S. Dep't of Agriculture, *Missouri River Basin Agricultural Program*, H. R. DOC. NO. 373, 81st Cong., 1st Sess. iii-iv (1949); House Subcommittee to Study Civil Works, *The Flood Control Program of the Department of Agriculture*, 82d Cong., 2d Sess. (1952).

Flood Prevention Act of 1954 (Hope-Aiken Act), as amended in August 1956.² Congress has provided that the national government shall cooperate with the states and their political subdivisions to conserve, utilize, and dispose of water to protect both land and water resources. To this end, the act authorizes the Secretary of Agriculture to assist states or local organizations empowered under state law to carry out, maintain, and operate works of improvement by: (1) conducting investigations and surveys; (2) planning and calculating estimates necessary for adequate engineering evaluation; (3) allocating costs to the various features of a project and determining whether benefits exceed costs; (4) entering into agreements with local organizations and giving them financial assistance; (5) obtaining the cooperation of other federal agencies in carrying out the provisions of this legislation; and (6) making loans not exceeding five million dollars to finance individual local undertakings, to be repaid within fifty years of the date when the benefits of the improvements first become available. The "works of improvement" authorized for assistance are defined by law to mean any undertaking for flood prevention, including both structural and land-treatment measures, as well as projects for the conservation, development, utilization, and disposal of water. The act, thus, authorizes the Secretary to undertake a comprehensive, multipurpose program.

There are, however, important limitations on this authority. Any watershed treated under the terms of the act is not to exceed 250,000 acres in area, nor may it contain any structure (dam) providing more than 5,000 acre-feet of *floodwater detention* capacity nor more than 25,000 acre-feet of capacity for *all* purposes (such as municipal water supply in addition to floodwater detention). Further, although the amendment of August 1956 provides that the federal government shall bear the entire cost of constructing the works of improvement devoted to flood prevention, no appropriation may be made for any plan involving a federal contribution of financial aid in excess of \$250,000 nor for a project including a structure providing more than 2,500 acre-feet of *total* capacity, without authorization by the appropriate committees of Congress. The dividing line for determining congressional committee jurisdiction over these projects is 4,000 acre-feet. If a plan involves the construction of no single structure over this amount in capacity, the Agriculture Committees of the two houses have jurisdiction; if any single structure exceeds the 4,000 acre-feet limitation, the Public Works Committees have jurisdiction. If, however, the project is small enough so that it neither requires federal financial assistance in excess of \$250,000 nor contains any structure larger than 2,500 acre-feet of capacity, no review by congressional committee is now required. The \$250,000 and 2,500 acre-feet limit is also used to determine whether there shall be review of a proposal by the Department of the Interior and the Corps of Engineers. No review by these agencies is necessary for works under this limit, but a project exceeding it must be submitted for review and comment to either or both of these agencies before transmittal to Congress so long as it contains features of appropriate concern to them.

² 68 STAT. 666 (1954), as amended, 16 U.S.C. §§1001-07 (Supp. III, 1956).

Other portions of the act define the responsibilities of local organizations seeking the assistance of the Department of Agriculture. The sponsoring local organization must acquire, without cost to the federal government, the necessary land, easements, and rights of way; assume a proportionate share, determined by the Secretary of Agriculture to be equitable, of the costs of installing works related not to flood prevention, but to agricultural phases of the conservation, use, or disposal of water; arrange to bear the costs of operating and maintaining the works of improvement to the satisfaction of the Secretary; either acquire, or provide assurances to the Secretary that landowners or water users have acquired, water rights pursuant to state law necessary for the installation and operation of works; obtain agreements that recommended farm-conservation practices will be carried out by the owners of not less than fifty per cent of the lands situated above each retention reservoir to be installed with federal aid; and submit a plan to repay any loan made by the federal government under the terms of the act. Provision is also made for local organizations to make optional use of federal engineering assistance for flood-prevention projects, with the costs of nonfederal professional assistance being reimbursible up to five per cent of project cost, although for municipal or industrial water-supply works, the local organization must provide nonfederal professional engineering services to the satisfaction of the Secretary.

The plan of improvement in each case must be scrutinized by either the governor of the state or an agency designated by him. If, within forty-five days of submission, the plan is not disapproved, it is sent forward to the Secretary of Agriculture for his review and amendment, approval, or rejection. Thus, the Secretary has ultimate authority over all small projects falling under the 250,000 acre area limit, the \$250,000 appropriation limit, and the restriction of structure size to 2,500 acre-feet of capacity; and even with respect to larger projects, he has authority to reject or require modification of project plans. The Administrator of the Soil Conservation Service has been assigned the responsibility of effectuating all but one of the provisions of this law.³

B. Scope of the Program

The watersheds to be treated under the Hope-Aiken Act are actually quite small in size, just as the structures to be erected within them are relative mites when compared with such giants as Fort Peck, Oahe, and Gavins Point Dams on the mainstream of the Missouri River.⁴ Few of the projects approved so far approximate 250,000 acres in area or contain structures impounding so much as 2,500 acre-feet of water. The net result is that individual projects, as far as they go, are not intended to approach erosion and floodwater problems from the river basin standpoint. The

³ Exec. Order No. 10584, 3 C.F.R. 98 (Supp. 1954). Cf. U. S. DEP'T OF AGRICULTURE, POLICY OF THE SECRETARY OF AGRICULTURE FOR THE ADMINISTRATION OF THE WATERSHED PROTECTION AND FLOOD PREVENTION ACT (1956).

⁴ Until 1951, the Soil Conservation Service had constructed only four dams of 5,000 to 25,000 acre-feet capacity and ten in the 3,000 to 5,000 acre-feet range; the largest number was in the 50 to 1,000 acre-feet range. See *Hearings before the Senate Committee on Agriculture and Forestry on Watershed Projects*, 84th Cong., 2d Sess. 73 (1956).

legislative authorization for these small projects is a continuing one, however, subject only to the support of appropriations. In this respect, therefore, the program is a "national" one, like the others administered by the Soil Conservation Service.

Some indication of the scope of the small watershed program now being carried out under the act (which is in addition to similar projects authorized by the Agricultural Appropriation Act of 1953⁶ and the Flood Control Act of 1944⁷) can be gained from data used for planning activities for the fiscal year 1957.⁸ As of May 1956, the Department of Agriculture had received 480 applications for assistance from local sponsoring groups. It had approved 153 of these projects for detailed planning in forty-three states. Of the work plans approved at the planning stage, the Department expected to submit thirty-five to Congress during fiscal year 1956 and an additional seventy-five during fiscal year 1957. It was anticipated that construction would be initiated on fifteen projects during 1956 and on seventy-five during 1957. Funds totaling \$5,526,079 were available for small watershed planning and works of improvement in 1955; in 1956, \$13,423,136 were available, including a carry over from 1955 of more than \$1,600,000. For 1957, the Department requested an increase of \$3,755,935, for a total of \$15,500,000 for the continuation of this work. The increased estimate of three and three-quarter million dollars reflected the anticipated acceleration of requests for assistance, which the Department proposed to distribute to increases in federal contractual aid for works of improvement (which accounts for \$2,620,000), the personnel costs of increased federal engineering supervision of the projects, and a similar item for the acceleration of land-treatment measures upstream from proposed structures (which latter two items account for the remainder of the increased estimate).

On the whole, the projects already authorized for planning assistance are quite small in size: eighty-five of them cover watersheds of 0-50,000 acres; nineteen are from 50,001-100,000 acres; nineteen are from 100,001-150,000 acres; fifteen are from 150,001-200,000 acres; and fifteen are from 200,001-250,000 acres. Individually, the sizes range from the 1,000 acres of the Small Canyon watershed in San Bernardino County, California, to the pugnacious Upper Bully Creek watershed, occupying 247,040 acres in Malheur County, Oregon. Of thirty projects reported to the Senate to be in various advanced stages of planning, individual project costs varied from a minimum of \$60,494 for the Lake Placid-East Chain of Lakes Project in Florida to a maximum of \$5,561,097 for the Upper Brushy Creek watershed in Texas. The estimated time for the completion of these particular watershed protection projects also varied considerably, but the minimum was one year for two projects, ten years for six of them, and five years for all but four remaining ones falling in between the

⁶ 67 STAT. 214. See note 12 *infra* and accompanying text.

⁷ 58 STAT. 905, as amended, 33 U.S.C. §701f-3 (Supp. III, 1956). See note 9 *infra* and accompanying text.

⁸ These data have been gathered from the following sources, unless otherwise noted: *Hearings, supra* note 4, at 57-72; *Hearings before the Subcommittee of the Senate Committee on Appropriations on H. R. 11177, Agricultural Appropriations for 1957*, 84th Cong., 2d Sess. 218-36 (1956); *Hearings before the Subcommittee of the House Committee on Appropriations on Department of Agriculture Appropriations for 1957*, 84th Cong., 2d Sess. pt. 4, at 1926-29, 1967-2003 (1956).

two extremes. Since it is possible to plan the development of a small watershed as part of a long-term scheme for areas embracing more than the single-project minimum of 250,000 acres, it is difficult to get a clear picture of the time which will actually be required to complete some of these projects.⁸

The Department of Agriculture is presently engaged also in the development of two other groups of watershed projects which differ in certain details from the small projects authorized by the Hope-Aiken Act. Eleven watersheds were authorized for treatment under the Flood Control Act of 1944.⁹ The land-treatment measures and flood-prevention structures being developed in these particular projects are substantially the same as those now under construction under the authority of the Hope-Aiken Act, but the authorization for them is flood-control legislation; therefore, the lack of limitations on size, cost, the role of local agencies, and coordinating procedures on the Washington level leave the Department with a somewhat freer hand in some respects. These projects are much more ambitious than those planned under the Hope-Aiken Act. The smallest will be completed at an estimated total cost of \$5,450,691, and the largest at a cost of \$112,301,526; the majority will cost \$25,000,000 or more, with the total figure running to \$450,650,873. The nominal "federal" share of this total is presently \$321,893,480. Construction, so far, however, has been disappointingly slow. Aggregate federal funds available through the end of fiscal year 1956 amounted to only \$59,242,969. Although the Department has reported to Congress that local contributions in terms of easements and rights of way are two years ahead of federal funds to utilize them, other official reports suggest that progress has been slow and uneven. At the rate of appropriations requested for 1957 (\$10,700,000), it will require from six to thirty-four years to complete these projects, with the average for all of them being twenty-five years, according to a spokesman for the Department. Moreover, work plans have been completed for only about 13,750,000 acres of a total of slightly over 30,000,000 acres to be treated in these watersheds. When it is noted that the surveys for these (and several other) watersheds were authorized by the Flood Control Act of 1936,¹⁰ the scope of the task and the pace of work becomes obvious.¹¹ The Department's work under the Watershed Protection Act of 1954 is an additional burden.

The immediate forerunner to the small projects authorized by the Hope-Aiken Act was the program of "pilot" watersheds "authorized" by the Agricultural Appro-

⁸ See *Hearings before the Subcommittee of the Senate Committee on Appropriations*, *supra* note 7, at 253-54. An official of the Soil Conservation Service estimated that the program may ultimately cost \$80,000,000 per year. *Hearings before the Subcommittee of the House Committee on Appropriations*, *supra* note 7, pt. 5, at 80-90, 147-52, 295-303. Cf. 1 U. S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 1, at 196, for an estimated total cost of \$17,000,000,000 to the federal government for the entire program.

⁹ See *Hearings before the Subcommittee of the Senate Committee on Appropriations*, *supra* note 7, at 236-41; and *Hearings before the Subcommittee of the House Committee on Appropriations*, *supra* note 7, pt. 4, at 1970-76, and pt. 5, at 296-97.

¹⁰ 49 STAT. 1570, 33 U.S.C. §701 *et seq.* (1952).

¹¹ See Maass, *Protecting Nature's Reservoir*, 5 PUB. POLICY 71, esp. 71-78 (1954).

priation Act of 1953.¹² This authorization was different from the original Hope-Aiken Act, as were the details of financing projects and the role of local agencies. The nature of the installations is, however, the same. The Soil Conservation Service commenced the construction in "pilot" watersheds selected ostensibly to demonstrate the effectiveness of watershed protection measures for flood prevention. Sixty of these projects were originally undertaken, but two were withdrawn, leaving fifty-eight active ones for completion in thirty-one states. It was originally anticipated that these pilot projects would be completed in five years, at a cost of \$28,706,000, but the Service now admits that it will require about eight years and \$31,800,000 to complete them. For the fiscal year 1957, the Department of Agriculture requested \$7,000,000 for these pilot projects. Individually considered, they are generally larger and more expensive than the projects so far authorized under the Hope-Aiken Act. They vary from a minimum of \$69,616 for the Switzler Creek watershed in Kansas to \$6,012,549 for the Walnut Creek watershed in California; nineteen of them will cost more than \$1,000,000 each. The officially estimated local contribution to total costs varies from fourteen per cent to eighty-six per cent, although the Department claims that the average local share is fifty-six per cent.

C. Legislative History

1. *Conception and Birth*

Congressional concern with watershed management as an aspect of flood control is not new. As early as 1911, Congress passed the Weeks Forest Purchase Act, amended by the Clarke-McNary Act of 1924, for the acquisition of forest lands located on the headwaters of streams for the control of run-off.¹³ Subsequent legislation expanded the role of the Forest Service in connection with flood reduction and watershed protection in forested areas.¹⁴ Shortly after the establishment of the Soil Conservation Service,¹⁵ the Department of Agriculture was authorized by the Flood Control Act of 1936 to undertake preliminary examinations and surveys of measures for controlling run-off, soil erosion, and water-flow reduction in watersheds upstream from the rivers and tributaries under the jurisdiction of the Corps of Engineers.¹⁶

Although the inclusion of the Department of Agriculture in the flood-control program was scarcely more than an afterthought, it was assumed when the act was passed that the Department would cooperate with the Corps in preparing joint survey reports on rivers and their watersheds, with joint responsibility for any

¹² See *Hearings before the Subcommittee of the Senate Committee on Appropriations*, *supra* note 7, at 251-52; *Hearings before the Subcommittee of the House Committee on Appropriations*, *supra* note 7, pt. 4, at 1981-99.

¹³ 36 STAT. 961, as amended, 43 STAT. 653, 16 U.S.C. §§ 513-19, 521 (1952).

¹⁴ 45 STAT. 699 (1928); Flood Control Act of 1936, 49 STAT. 1570, 33 U.S.C. §701 *et seq.* (1952); Cooperative Forest Management Act, 64 STAT. 473 (1950), 16 U.S.C. §568c, d (1952).

¹⁵ 48 STAT. 195 (1933), as amended, 49 STAT. 163 (1935), 16 U.S.C. §590a-g (1952).

¹⁶ See 3 U. S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 1, at 1032-39, and sources cited.

further actions taken. These expectations did not materialize, however, and the Department soon steered its own course.¹⁷ The Flood Control Act of 1936 authorized the Department to make preliminary investigations and surveys of 1,082 watersheds. By the time the small watershed program was authorized in 1954, however, the Department had sent to Congress only twenty-six detailed surveys and the Missouri Basin Agricultural Program—in all, \$18,000,000 worth of study. The Flood Control Act of 1944 had authorized construction on eleven of these projects, but the remainder of the surveys have been gathering dust in committee files.¹⁸ Obviously, World War II, among other factors, disrupted the Department's work.

In 1951, after the Secretary of Agriculture had submitted to Congress his comprehensive Missouri Basin Agricultural Program, including watershed flood-prevention features,¹⁹ the House Committee on Agriculture, to which the report had been referred, commenced hearings in which members reflected the view that watershed flood prevention should be started without waiting for full river valley or basin-wide development.²⁰ The Committee became convinced that the flood-control works of the Corps of Engineers are not effective upstream in the small creeks and branches of tributaries and that from twenty-five to seventy-five per cent of all flood damage occurs in these upstream areas. Consequently, in May 1952, Representative Poage (D., Tex.) drafted and introduced a bill to implement the small watershed program.²¹ After being amended in committee and favorably reported to the House, it became lodged in the Rules Committee, where it was opposed by the Committee on Public Works, whose members were sensitive to the fears of the Bureau of Reclamation and the Corps of Engineers. But even before Representative Poage had introduced his bill, the Jones Subcommittee of the House Public Works Committee had started hearings on the Department of Agriculture's flood-prevention program, since the existing authority for it was the Flood Control Act of 1936, which had been within the jurisdiction of that committee. After searching review, the Jones Subcommittee gagged on the record and recommended emphatically that the Department be subordinated to the Corps in undertaking flood-control work in the watersheds.²² At this point, the prospects for a small watershed program of any sort were something less than encouraging.

With the change in party majority in the 83rd Congress, however, Representative Hope (R., Kan.) became chairman of the House Committee on Agriculture, and one of his early moves was to introduce a bill embodying most of the features of the one stopped by the friends of public works in the previous Congress.²³ During ex-

¹⁷ See Maass, *supra* note 11, at 73-76.

¹⁸ See House Subcommittee to Study Civil Works, *supra* note 1, at 1-7; Maass, *supra* note 11, at 72, 106; House Committee on Agriculture, *Soil Conservation and Watershed Programs*, H. R. REP. NO. 1140, 83d Cong., 2d Sess. (1954).

¹⁹ See U. S. Dep't of Agriculture, *supra* note 1.

²⁰ See *Hearings before the Subcommittee on Soil Conservation and Flood Control of the House Committee on Agriculture*, 82d Cong., 1st Sess. 36-37, 87-90, 95-98 *et seq.* (1951).

²¹ H.R. 7868 and substitute bill H.R. 8243, 82d Cong., 2d Sess. (1952).

²² House Subcommittee to Study Civil Works, *supra* note 1, at 42-44.

²³ H.R. 6788, 83d Cong., 1st Sess. (1953).

tensive hearings, the groups pressuring for the legislation had ample opportunity to voice their sentiments. Not until the bill had passed the House and was sent to the Senate Committee on Agriculture and Forestry did serious opposition from the Corps of Engineers appear. But after some pressures had been applied, with the support of the White House, an amended version (actually a mixture of Representative Hope's bill and another introduced by several senators) of the legislation was enacted in August as the Watershed Protection and Flood Prevention Act of 1954.

In the meantime, however, many diverse groups interested in securing permanent authorization for the Department of Agriculture's program aside from the Flood Control Acts of 1936 and 1944 had formed the National Informal Citizens Committee on Watershed Conservation. This group, conscious of the difficulties standing in the way of regular legislative authorization in the form of a new law, worked with considerable finesse through such key congressmen as Representative Hope, Senator Carlson (R., Kan.), and Representative Carl Anderson (R., Minn.), then chairman of the Subcommittee on Agricultural Appropriations of the House Committee on Appropriations. Despite the failure of the Department of Agriculture or the Bureau of the Budget to include estimates for such a purpose, \$5,000,000 were appropriated as part of the Department's grant for fiscal year 1954. This item was included only after a heavy fight in conference committee by this handful of congressional friends of the movement. In this fashion, the "pilot" watershed program was launched without prior legislative authorization. The congressional and private leaders of this foray into the Treasury confidently anticipated that the "pilot" program would quickly generate enough support on the hustings to insure the passage of permanent authorization for this program in the then near future. Their expectations were, of course, fulfilled with the enactment of the Hope-Aiken Act.²⁴ Events were soon to prove, nonetheless, that even this legislation was not entirely satisfactory to the most ardent supporters of the small watershed program, nor had it completely soothed the fears of its old foes among other related federal agencies and their public clientele.

The lack of progress in the small watershed program since 1936 has been attributable to many factors. The Soil Conservation Service, charged with executing this program, started largely from scratch with its surveys and had scarcely reached the planning stage before World War II hindered its efforts. In addition, there was a deep internal division within the Department of Agriculture which was resolved only by the authorization for the pilot watershed projects. The Missouri Basin Agricultural Program submitted to Congress in 1949 reflected the conviction of the Secretary's office that any approach to the flood problem should be comprehensive in both geographical scope and means employed. Flood-prevention measures would have to be designed in relation to other conservation techniques and farm practices, with consideration given to economic and social results—in short, it should be the

²⁴ See further, Morgan, *Pressure Politics and Resources Administration*, 18 J. POLITICS 39, 48-55 (1956).

product of total planning. The "land doctors" of the Service did not, however, want to be concerned with more than the on-farm conservation practices, which, together with the proposed small flood-retarding structures, would constitute the total of their operations. In addition, many persons within the Service preferred to limit the size of individual projects so that they could continue operations through the soil-conservation districts, with which they already had established friendly and effective agency. The construction of small flood-detention structures is a logical extension of on-farm conservation practices, and it is apparent even to the most obtuse observer that the Service would be assured of a century of labor in the nation's service if its program were authorized so as to free the agency from the toils of the Corps of Engineers and its congressional godfathers, the Public Works Committees.

The Jones committee of the House also purported to detect an intention on the part of the Department of Agriculture to pervert the flood-control legislation by using the Agricultural Conservation Payments Program under the guise of flood control.²⁵ Moreover, the Department was not satisfied with its authorization to function under the Flood Control Acts. Partly, at least, its discontent was owing to the fact that the Public Works Committees authorize construction on a project-by-project basis, whereas the Department's other programs involving conservation had been based on continuing authorizations not requiring approval of each specific plan of works. The Department also had limited funds available to conduct surveys, and, in this respect, it could not compete with the Corps of Engineers in either the thoroughness of its preliminary examinations or the speed of its operations. Too, the Department wished to tie its on-farm and small structure operations in a single budgetary package—in fact, it needed to do so with these complementary programs, so that it could not readily operate on a project basis—and it had the support of the Bureau of the Budget for this approach.

The Department of Agriculture was made painfully aware of the hostility of the House Public Works Committee through the Jones Subcommittee report, which was suspect as a reflection of the animosity of the Corps to the Department's program. Much of this interagency animus was cloaked in technical differences, many undoubtedly genuine enough, which even today make the prospects for effective coordination of the two principal parts of the nation's flood-control program rather dim at best. More recent developments have, in addition, entangled the Bureau of Reclamation in an unhappy triangle of bureaucratic fratricide, put temporarily at rest, however, by recent amendments to the Hope-Aiken Act.

2. Amendment

Little more than one year's experience with the Watershed Protection and Flood Prevention Act convinced some of the public clientele who had given it birth that it was an awkward and ungainly offspring.

²⁵ House Subcommittee to Study Civil Works, *supra* note 1, at 40-44.

The original Hope-Aiken Act authorized the Department of Agriculture to undertake works of improvement in watersheds not to exceed 250,000 acres in area nor to include any single structure providing for more than 5,000 acre feet of capacity. Non-flood-prevention features included were to be paid for by local sponsors. Both the record of testimony before congressional committees and the terms of the statute purported to emphasize the idea that this program rested on the initiative of local sponsors, who were merely to be "aided" by the federal government. It was heavily stressed that this policy was not just another federal public works program to be forced on unwilling citizens. Significantly, the act permitted the Secretary of Agriculture to assume such share of the cost of installing works of improvement as he might deem equitable in light of the anticipated benefits which were to exceed costs. To insure some measure of coordination, the Corps of Engineers and the Bureau of Reclamation were given sixty days to review all projects involving flood prevention or irrigation works. This review was to be followed by similar scrutiny in the Bureau of the Budget. Finally, any project involving single structure providing for more than 2,500 acre-feet of capacity had to be submitted to the Committees on Agriculture of the two houses of Congress, before any appropriation for it could be authorized. It appears that, in practice, however, the Department actually submitted all plans to Congress for committee review while this provision was in effect.²⁸

The sponsors of the original Hope-Aiken Act were a diverse group, headed in the final stages by the National Informal Citizens Committee on Watershed Conservation, of which Raymond McConnell, editor of the Lincoln (Neb.) Evening Journal, had become the recognized leader. This leadership group drew its membership and support from such established organizations as the National Association of Soil Conservation Districts, the National Association of Manufacturers, numerous local soil-conservation groups and watershed associations (it is estimated that there are more than 800 of these in the country now), and some publishing groups, notably Capper's in Kansas and the Curtis Publishing Company. By May 1954, this group, augmented by many others interested in wildlife, water, and soil conservation, amalgamated to form the National Watershed Congress. This alignment of forces naturally played the key role in securing enactment of the Watershed Act of 1954, although it would be a mistake to assume that it is monolithic in either form or action. The most potent voices within this Congress have been those of the National Association of Soil Conservation Districts and the watershed associations.

On the other hand, the Farm Bureau, the Chamber of Commerce of the United States, the National Association of Manufacturers, and the National Lumber Manufacturers Association, too, have all associated with the National Watershed Congress and have sent representatives to testify at congressional hearings on legislation. In general, they have "supported" the legislation, but have recommended restrictions

²⁸ See *Hearings before the Subcommittee on Conservation and Credit of the House Committee on Agriculture on Amendment to Watershed Protection and Flood Prevention Act*, 84th Cong., 2d Sess. serial JJ, esp. 11-29 (1956).

which would seriously limit the effect of the small watershed program. Thus, when the Hope-Aiken Act was before committee in Congress, the Farm Bureau advocated a specific statutory provision that the Secretary of Agriculture require local sponsoring units to share fifty per cent of the cost of works of flood prevention. And both the Farm Bureau and the Chamber of Commerce offered an identically-worded amendment to Senator Aiken's bill that would have forced local sponsors to assume the burden of actual construction of projects.²⁷ The watershed and soil-conservation groups, recognizing the inability of the Department of Agriculture to compete with the Corps of Engineers in dam building if this requirement were included, however, successfully fought off this attempt to cripple the program. But, before the Senate Agriculture Committee, the Corps and its powerful friends in and out of Congress opposed the Department's program outright as unsound (or at least yet to be proved) technically and as an unnecessary duplication of activity by federal agencies; and it was this opposition which forced the friends of the Hope-Aiken Act to accept limits on the size of projects and of individual structures.

During the first year and one-half of operation of the program, certain shortcomings appeared. One was that the flexible federal-local cost sharing formula left many sponsoring organizations in doubt as to their share of the cost of a project until it had cleared the office of the Secretary of Agriculture. Furthermore, in areas of poor land, often the ones needing the most extensive and immediate outside assistance for works of improvement, sponsors could not raise the necessary local contributions. These two factors alone stirred sharp complaints soon registered in Congress, so that eight bills were offered in the last session to amend the Hope-Aiken Act.²⁸ The charge was freely made that the Department of Agriculture was, by administrative interpretation and policy, requiring that local units sponsoring projects pay on the *average* more than fifty per cent of the total costs—a policy remarkably parallel to the one advocated by the Farm Bureau and the Chamber of Commerce in hearings on the legislation. It is scarcely insignificant to note, moreover, that the Department not only did not sponsor any amendments (any more than it did the original legislation), but also openly opposed the key changes sought by the National Association of Soil Conservation Districts and watershed-conscious congressmen.²⁹ Witnesses testifying on the proposed amendments in 1956 also pointed out the fact that the Department could not compete with the Corps of Engineers in building small dams at little cost to localities. It was also facing competition from the Bureau of Reclamation's small projects legislation then pending in Congress. In addition, the decline in farm prices had jeopardized the ability of local

²⁷ See *Hearings before the Senate Committee on Agriculture and Forestry on Cooperative Soil Conservation and Flood Prevention Projects*, 83d Cong., 2d Sess. 38-42, 82 (1954).

²⁸ H.R. 6687, 8722, 8738, 8742, 8745, 8750, 8804, and 9192, 84th Cong., 2d Sess. (1956).

²⁹ See testimony of Ervin L. Petersen, Assistant Secretary of Agriculture, *Hearings*, *supra* note 26, at 9-11; see also testimony of Donald A. Williams, Administrator, Soil Conservation Service, in *Hearings*, *supra* note 4, at 44: "The Department of Agriculture has not recommended the enlargement beyond the 5,000 acre-feet." The National Association of Soil Conservation Districts supported the chief amendments. See *Hearings*, *supra* note 26, at 35-39.

sponsors to meet costs, so that there was a pressing need for federal credit to assist these projects (again because of competition from the Bureau). A further objection to the original legislation was that the 5,000 acre-feet limitation on the size of a single structure often resulted in the need to construct, at unnecessary additional cost, several smaller structures, sometimes resulting in a less satisfactory system of works in a watershed. There was also complaint from the hustings that the program had been implemented much too slowly by the Department and that the requirements of interagency and congressional review of small projects were unnecessary obstacles to speed.³⁰

These criticisms, voiced before a sympathetic subcommittee of the House Committee on Agriculture, resulted in several important amendments to the original Hope-Aiken Act.³¹ Works of improvement now include municipal and industrial water supply as well as streamflow regulation; the total capacity of one structure may now be 25,000 acre-feet, provided that not more than 5,000 acre-feet are devoted to flood detention; minor projects are exempted from congressional review, and the interagency review period has been cut to thirty days; but most important of all, the federal government must bear the entire cost of flood-prevention structures and may make loans up to \$5,000,000 on a single project at the long-term government interest rate. The committee review provisions, already described in detail earlier in this paper, also can be expected to have significant effects. It is interesting to note that when President Eisenhower signed the amending legislation, he publicly voiced disapproval of the provision requiring the federal government to bear the cost of flood-reduction works as a violation of his "partnership" philosophy of resources development.³²

III

A CRITICAL ANALYSIS OF PROBLEMS

A. Big Dams and Little Dams

For nearly a decade now, the shrill debate over the merits of small dams and watershed management, as compared with large dams, for flood control has raged across the rural landscape of the United States. The echoes, muted by the sophisticated struggle within the executive agencies for program, power, and pie, have not failed to reach the ears of congressmen. The Department of Agriculture, as official spokesman for the little dams, claims that floods begin where the rain falls and that seventy-five per cent of the annual flood damage occurs upstream in the watersheds of our rivers. It has also claimed that flood-protection measures against this damage have been largely ignored, while attention and efforts have been devoted almost exclusively to the construction of large works on the mainstreams. Until the passage

³⁰ See *Hearings*, *supra* note 26, at 32-35, 39-46, 81, 82 for more detailed criticisms of the program and its administration.

³¹ 70 STAT. 1088 (1956). Some minor features of this act are not described here.

³² Press release, White House, Aug. 7, 1956.

of the Hope-Aiken Act, the Department took the view that it was not being included as a full partner with other agencies in flood-control work. Officially, however, the Department has not disparaged the programs of other agencies, but it has claimed that their works, especially those of the Corps of Engineers, are not as effective as they would be if watershed-treatment measures were installed on the tributaries.

Nevertheless, despite the official position of departmental spokesmen on the Washington level, the evidence on the hustings is that great numbers of followers have crusaded for small dams with messianic zeal, convinced that the construction of big dams is wicked folly.³³ It is among such advocates that the Department of Agriculture has its strongest clientele, and, in turn, there is evidence to suggest that the Soil Conservation Service, if not the Department, has encouraged such faith in its works. Its spokesmen have appeared before Congress disclaiming any conviction that small dams alone will save the nation from floods, while relating in the next breath instances in which deluges of rain failed to destroy the works already installed, leaving peaceful rustic valleys and industrious towns unravaged by the vagaries of nature.³⁴ Critics say, however, that seventy-five per cent of the benefit from such works occurs upstream from the dams.

The technical issues involved in this dispute are complex. It appears, moreover, that some of the conflict amounts to jousting with a straw man. To a layman, at least, it seems that any properly constructed dam will hold some water in place for a period of time. So far as the Corps of Engineers and the Soil Conservation Service are concerned, there has not, however, been complete agreement on the adequacy of some of the structures which the latter has proposed to build. Recently, for example, the Corps announced outright approval of only two out of thirteen small watershed projects submitted to Congress by the Service. Although it voiced six other objections to these projects, its primary one was there is a need for "mature consideration" of the risks involved in constructing dams above urban areas where the design criteria are those employed to protect agricultural bottom lands in rural areas.³⁵ Since it is no longer the official claim of the Service that its small dams will stop major floods, a question of their effectiveness remains.

The "pilot" watershed program was pushed through Congress in an extraordinary proceeding justified by the plea that the value of this approach needed to be tested and demonstrated. For nine years, however, the Soil Conservation Service had been developing the eleven watersheds authorized by the Flood Control Act of 1944 without having complete hydrological and other data to permit objective evaluation. Even if the "pilot" program could be justified as necessary to continue such an

³³ One example of the most extreme literature is ELMER T. PETERSON, *BIG-DAM FOOLISHNESS: THE PROBLEM OF MODERN FLOOD CONTROL AND WATER STORAGE* (1954). Two examples of official or semi-official writing are: BROWN, *Flood Prevention Through Watershed Planning*, 34 *AGRICULTURAL ENGINEERING* 159 (1953); U. S. DEP'T OF AGRICULTURE, SOIL CONSERVATION SERVICE, *TAMING RUNAWAY WATERS* (Agricultural Information Bull. No. 16, 1949).

³⁴ See *Hearings*, *supra* note 26, at 28; *Hearings before the Subcommittee of the House Committee on Appropriations*, *supra* note 7, pt. 4, at 1973.

³⁵ *Hearings*, *supra* note 4, at 27, 31.

evaluation, no such defense can be made on technical grounds for the continuing national program authorized by the Hope-Aiken Act. If Congress and the Service genuinely desired to have "scientific" support for this program, it would appear logical to have spent available funds on the acceleration of the present projects, without expending an already overworked force on some projects scarcely to be completed within the lifetime of living man. Nor have all the "pilot" projects even been instrumented so as to acquire vitally needed data. The "scientific" value of such information may in the future be better assured by studies conducted by agencies which have no stake in program expansion. It is not amiss here to recall Mark Twain's distinction between a camp meeting and a court of law: it is the difference between manufacturing evidence for the sake of testimony and manufacturing testimony for the sake of evidence. In fairness to the Service, however, it should be said that it has recognized the need to accelerate the accumulation of data and it has asked the assistance of other federal agencies. Furthermore, most of the Soil Conservation Service's research functions have been transferred to the Agricultural Research Service, a move which has caused some alarm among congressmen who are especially sympathetic to the former.³⁶ It is not so much, however, that no research is underway, as it is that not enough of the right kind has been undertaken on a coordinated basis.³⁷

There are other technical factors. The present projects are very small in size individually, but since so little is really known about their future effect on the physical environment, there appear to be few positive answers to these questions. For example, is the present minimum area, 250,000 acres or approximately 390 square miles, too small for optimum development? It has been argued that the small watershed is necessary to secure the support of the people of an area not so large as to blunt their sense of urgency or of participation in the development. They must be able to see their stake in the works.³⁸ Whatever the merit of this view, however, the question is whether local interest is purchased at the cost of comprehensive evaluation and planning. Proper criteria, moreover, should be established to determine priorities for individual projects.

So far, the small watershed program has been both partially damned and supported by responsible survey groups. The Jones Subcommittee of the House was of the opinion that both "upstream and downstream works have their place in a balanced conservation program." The subcommittee did deplore, however, the meager results then available from the \$18,000,000 spent by the Department of Agriculture for surveys in nearly seventeen years. It also was of the opinion that soil and water

³⁶ See *Hearings before the Subcommittee of the Senate Committee on Appropriations*, *supra* note 7, at 91-94, 144, 632, 645, 685, 721; *Hearings before the Subcommittee of the House Committee on Appropriations*, *supra* note 7, pt. 4, at 1930, 1940-50, 1980.

³⁷ See PRESIDENTIAL ADVISORY COMMITTEE ON WATER RESOURCES POLICY, *WATER RESOURCES POLICY* 6-12 (1956); 1 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 1, at 97-122 and App. 3; 1 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 1, at 1051-94.

³⁸ See 1 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 1, at 124-25. This argument was used in support of the Hope-Aiken Act. See Morgan, *supra* note 24, at 45.

conservation ought not to be disguised as flood control, but should be considered an integral part of a national agricultural program.³⁹ The Task Force on Water Resources and Power of the second Hoover Commission sharply criticized the engineering features of the Department's small watershed program. It found the Soil Conservation Service disingenuous in estimating benefits and reporting cost-sharing data. It raised questions concerning the engineering soundness of construction practices. It reported that the ultimate costs of small dams and related engineering works were higher than those of the larger structures normally erected by the Corps of Engineers and concluded that the inclusion of the Service in the field of dam construction was an unnecessary duplication of agencies in the federal flood-control program. Perhaps significantly, the Task Force did not find that there is no place in a national water resources program for watershed flood-prevention works. Like the Missouri Basin Survey Commission, the Hoover Task Force accepted the view that planning of such works is to be viewed properly in light of the interrelated aspects of land and water use on a comprehensive basis.⁴⁰

The difficulties of coordinated and comprehensive planning and construction and the improbability of their achievement have quite possibly been increased by the amended Hope-Aiken Act. It seems clear enough that the Soil Conservation Service has won its long struggle for permanent authorization of the small watershed program. The areas to be treated and structures which can be built are both so small, however, that the approach may be piecemeal. Moreover, the requirement that any project involving the construction of a dam with 4,000 acre-feet of capacity or more shall require authorization by the Public Works Committees of Congress means that few of these will be planned, if the Department of Agriculture's past unhappy relationship with these committees and the Corps of Engineers and Bureau of Reclamation is any guide to future conduct. More perhaps to the point, the clientele which actively supports the small watershed program has demonstrated its power in Congress and stands as a bulwark for the program against those who would snatch hard won gains from the Service in the name of administrative reorganization.

The picture may not be quite so dark, however. Potentially, the amendments enacted in 1956 broaden the scope of the program by authorizing the inclusion of works for municipal and industrial water supply and for the conservation, utilization, and disposal of water. Although the planning of individual projects is limited to areas of 250,000 acres, it is possible to join several areas under this maximum size under the sponsorship of a single local or state agency. And officially, coordination

³⁹ House Subcommittee to Study Civil Works, *supra* note 1, at 40-41.

⁴⁰ 1 U. S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 1, at 195; 2 *id.* at 776-86, 821-28; 3 *id.* at 1277-98; *cf.* MISSOURI BASIN SURVEY COMM'N, MISSOURI: LAND AND WATER 169-71 (1953); 1 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 1, at 139-40. See also, LUNA B. LEOPOLD AND THOMAS MADDOCK, JR., THE FLOOD CONTROL CONTROVERSY (1954).

with other federal agencies is encouraged to insure the maximum consideration of the effects of upstream works on downstream installations.⁴¹

B. Coordination Issues

Enough has already been said in this paper and in numerous other studies of the general problem to indicate that the lack of effective interagency coordination on the federal level is an unhappy characteristic of the Department of Agriculture's efforts toward flood-prevention work. The unwillingness or inability of the executive branch to settle its internal quarrels over resources policy has persisted with little or no abatement for many years.

The principal adversaries locked in battle over the small watershed program have been, of course, the Corps of Engineers and the Soil Conservation Service. The latter, moreover, and the Bureau of Reclamation recently have been looking cross-eyed at each other out of reciprocal animosity over the potentialities of their respective small projects programs.

It is tempting and easy to magnify conflict at the expense of unexciting evidence of cooperation, but the fact is that while the Corps of Engineers and the Soil Conservation Service have officially been at peace during the past two decades, there is little to show for it in good works. The bases for their differences are numerous, quite apart from any tendency toward self-aggrandizement on the part of either one. Recently, a spokesman for the Corps stated the difficulties from that agency's standpoint: there is need for careful study of the risks involved in building small earth dams upstream from urban areas and of adequate provisions for the operation and maintenance of completed structures; there must be more careful economic justification of projects; problems arise out of the wide variance in standards of federal assistance available to local sponsors in different watersheds; the Hope-Aiken Act fails to set a national drainage policy, although it probably can be used for that purpose; the Corps cannot carry out a policy of cost-sharing with localities in coordination with the Department because the Secretary of Agriculture has allowed wide variation in cost-sharing from project to project; and, finally, there is not an effective means of coordinating the construction of the Department's reservoirs with those erected by the Corps under flood-control legislation, especially as elements of a basin-wide system.⁴² Officially, the Department has offered little criticism in rebuttal. The Administrator, Soil Conservation Service, has testified, however, that field technicians have agreed to modifications of the plans of their respective agencies only to be stymied by disagreements over technical and jurisdictional questions on the Washington staff level below the office of assistant secretary in the two departments (Agriculture and Army).⁴³

Interviews with field personnel indicate that there are other reasons for disagree-

⁴¹ Exec. Order No. 10584, 3 C.F.R. 98 (Supp. 1954). See also U. S. DEP'T OF AGRICULTURE, SOIL CONSERVATION SERVICE, INTERIM WATERSHED PROTECTION HANDBOOK §1, at 7; §2, at 5-10 (1956).

⁴² *Hearings*, *supra* note 4, at 27-44, esp. 31-32.

⁴³ *Id.* at 44.

ment. The two agencies are planning for two different stages of flood prevention, and neither knows the ultimate effect of the other's works on his own. Instances in which the Corps of Engineers' cost-benefit ratio is low occur, and, if the Department of Agriculture builds upstream, economic justification of downstream works may reach the vanishing point under present standards. Too, the Corps ordinarily plans in terms of big structures which often inundate valuable farm land, thereby enraging farmers. The Corps operates the works it constructs, but the Service wants local sponsors to do this. Moreover, the Corps has the power of eminent domain, but the Service does not, nor does it want such authority; its program has traditionally rested on farmer cooperation. Therefore, the Service often finds that it cannot coordinate construction with the Corps because it cannot guarantee completion dates for its works. Furthermore, the technical procedures of the two agencies are quite different. On the whole, it appears that the Department has lacked detailed survey data on which to base its planning. When both agencies were asked to present a coordinated plan for the Salt-Wahoo Creek watershed in Nebraska in 1951, for example, technical personnel exchanged data and made joint *map* studies, but made separate plans for construction.⁴⁴ Recent testimony before Congress indicates that even the exchange of technical information has often been inadequate on the Washington staff level. Finally, in submitting reports and plans to Congress before the passage of the Hope-Aiken Act, the Department often cited either flood-control or agricultural legislation as the authority for its surveys of watersheds.⁴⁵ Certainly, it was not forthright with congressional committees on this score, but the Department's answer was that it was concerned primarily with an agricultural program.

Whatever the technical differences between the two agencies, however, it would seem that knowledge and good will could erase all conflict, were it not for the facts of administrative life. Unfortunately, knowledge alone is not power. The Corps of Engineers has piously told Congress that it has long favored the widespread application of land-treatment measures to reduce soil erosion and increase productivity.⁴⁶

But we have not attempted to go further than this in discussing the proposed land treatment plans. We are concerned with engineering matters and we have confined our comments and suggestions to the engineer plans proposed in the reports [of the Department of Agriculture]. In passing, however, I should like to say that these reports bear out what we have been saying for many years, namely, that the application of land treatment measures has but a minor effect on major floods.

For its part, the Department of Agriculture, torn by internal rifts arising from conflicting policy aims on the part of its subagencies, has been pushed by a combination of forces into the dam-building business.

The principal difficulty between the Soil Conservation Service and the Bureau of

⁴⁴ See House Subcommittee to Study Civil Works, *supra* note 1, at 11, 14-19, 23-24.

⁴⁵ *Id.* at 34-40.

⁴⁶ *Hearings, supra* note 4, at 27-28. See also *Hearings, supra* note 26, at 13, 25, 37, 51, 60, 72-73, 76.

Reclamation stems from the latter's fear that its jurisdiction over irrigation may be jeopardized by the small watershed program. Again, because their respective procedures, including authorization of projects, local sponsorship, cost-sharing arrangements, planning and construction techniques, and water use objectives differ, the Department of the Interior and its chief clientele, the National Reclamation Association, opposed the amendments to the Hope-Aiken Act. They claimed that the construction of small dams upstream over a large area would probably affect the stream-flow pattern so as to impair or alter materially the potential or actual beneficial developments for irrigation obtained in areas of undetained runoff. The Bureau specifically complained that Department of Agriculture procedures on the survey stage have resulted in such meager information as to leave future results largely to speculation. Since the Hope-Aiken legislation allows the Department of Agriculture to construct works for the "utilization" of water, it is obvious that it can be concerned with irrigation—and the Bureau does not relish the prospect.⁴⁷

Intradepartmental coordination involves the Soil Conservation Service with the Forest Service, too, to some degree. The former agency is charged with primary responsibility for administering the Hope-Aiken Act, but the latter is concerned with installing flood-prevention works of improvement on national forest lands as well as on certain other lands subject to its jurisdiction. It also has jurisdiction over non-federal forest lands in watershed projects. It appears that, so far, the Forest Service has played a minor role in contributing to the development of small watershed projects under this particular legislation, although it has had heavier responsibilities under other legislation for forest watershed management. Since emphasis is placed on local sponsorship of watershed projects, there may be considerable delay in extending the provisions of this act to the national forests. Especially does the Hope-Aiken Act pose some barrier to easy coordination, in so far as it restricts the rate of assistance under its authority to the rates prevailing under other national programs.⁴⁸ In addition, the Agricultural Conservation Payments Program of assistance to farmers for conservation practices requires coordination with payments for flood-prevention structures. And the Farmers Home Administration is charged with administering the loan provisions of the amended Hope-Aiken Act.⁴⁹

C. Executive-Legislative Relations

The history of the small watershed program is a running commentary on the central role of congressional committees in resources programming and of the failure of executive leadership and coordination. It is equally illustrative of the power of organized clientele on the bureau level of the federal executive.

With minor exceptions, there is little evidence that the small watershed program

⁴⁷ See *Hearings*, *supra* note 4, at 75; *Hearings*, *supra* note 26, at 64-65.

⁴⁸ See *Hearings*, *supra* note 4, at 79-83. Rumors of discord between the Soil Conservation Service and the Forest Service have reached Congress. See *Hearings before the Subcommittee of the House Committee on Appropriations*, *supra* note 7, pt. 4, at 1934-36.

⁴⁹ See note 3 *supra*.

now in effect ever received the enthusiastic and energetic support of the President or even of the Department of Agriculture. It is apparent that the Soil Conservation Service was left to fight for its own program in what amounted to a struggle for bureau autonomy within the Department and parity with the Corps of Engineers and the Bureau of Reclamation. Until President Eisenhower sent a special message to Congress in 1953 favoring the program,⁶⁰ there was no official position on it. Prior to 1953, the watershed survey work of the Service suffered from a lack of funds budgeted by the White House. The Bureau of the Budget could not agree with the Department on matters of budgetary procedure, nor did it consider the cost-benefit procedures employed by the Department to be adequate. And although the Department, under the aegis of Secretary Brannan, submitted its Missouri Basin Agricultural Program, such a comprehensive view was not in keeping with the convictions of the Service. It cannot be said, then, that the Department was initiating the small watershed program of the Service. More recently, in 1956, the Department, through Assistant Secretary E. L. Peterson, actively fought the key amendments to the Hope-Aiken Act by objecting to having the federal government assume the costs of constructing flood-prevention structures, opposing any increase of the 5,000 acre-feet limit on dam size, proposing a \$5,000,000 limit on federal loans to aid local sponsors, and opposing the extension of a provision authorizing the Secretary to undertake projects where there can be no sponsor under state law. And the President, it will be recalled, publicly objected to the new cost-sharing provision.⁶¹

The lack of executive leadership in initiating the program was matched by executive inability to coordinate either the programs or the agencies involved. The Bureau of Reclamation and the Corps of Engineers, the latter with special effectiveness, have opposed the Soil Conservation Service flood-control program at every turn, with little open hindrance from the White House. So free of presidential control was the Corps, indeed, that it could succeed in protecting its position by securing the inclusion of the 5,000 acre-feet limitation and the requirement of interagency review in the original act. Its influence was no less diminished when the amendments were passed in 1956. Although the President issued regulations to effect coordination among the agencies concerned, the actual result was that the Corps, and to a lesser extent the Bureau, used review as the occasion to sabotage the Department of Agriculture, if possible. During senate hearings on watershed projects in 1956, the disagreement between the Corps and the Department was so great as to force the committee chairman to require the two agencies to retire to a conference room to smooth out their differences and return within one week. They did so to the committee's satisfaction. In 1952, too, the Jones Subcommittee trenchantly criticized the executive agencies for their failure to reconcile differences so that the task of program

⁶⁰ *Program Designed to Conserve and Improve the Nation's Natural Resources*, H.R. Doc. No. 221, 83d Cong., 1st Sess. (1953).

⁶¹ See notes 29 and 32 *supra*. It has been reported that the Bureau of the Budget recommended a veto as did the Corps of Engineers. "The USDA, after some hesitation, asked the President to sign." Richter, *Washington Outlook*, 9 SOIL AND WATER 8 (1956).

coordination was left to congressional committees composed of laymen.⁵² Although the committees have performed this task, it is clear that members have not relished it, for the responsibility of making decisions on technical matters which may affect the lives of people living downstream from dams does not rest lightly on their shoulders.⁵³

It is difficult to explain these failures of the highest echelons of the executive branch, nor is it within the compass of this study to do so. Certainly, however, key congressmen, especially from the Midwest, Southwest, and Southeast, reflected a much greater sensitivity to pressures for the authorization of this program than did the executive branch outside the Soil Conservation Service. Once the clientele for this service became sufficiently well-organized to be felt in Congress, the program evolved wholly with legislative initiative: first, the authorization for the pilot projects (requiring the allegiance of farm-conscious members of the Appropriations Committees); then, the passage of the Hope-Aiken Act; and, finally, the amendment of the act this past year. Recently, these same congressmen have openly expressed doubts that the executive branch has supported the Service adequately with estimates over a period of many years. Pressed repeatedly in both house and senate committees to answer whether the Service had been authorized by the Bureau of the Budget to seek all the funds which it could use effectively, the Administrator replied that agency estimates were predicated upon a balanced budget rather than meeting full field needs.⁵⁴ It was apparent that members of the Appropriations Subcommittee on Agriculture in both houses were ready to press more funds on the agency than had been requested. It was equally evident that they viewed with alarm an eighty-five per cent increase in the funds of the Extension Service in a period during which the Soil Conservation Service received a seven per cent increase in appropriations.

Congress is not less guilty than the executive branch, however, in contributing to the proliferation of programs and to establishing the autonomy of the Soil Conservation Service. By establishing permanent authorization for the program, subject to the support of appropriations, Congress jerked the rug from under any Secretary of Agriculture who might be inclined to press for the Brannan approach to integrated basin development. It also rendered ineffective the Bureau of the Budget's objections. The recent amendments to the legislation have pulled the fangs of interagency review and have eliminated the provisions for congressional review and possible disallowance for the very small projects. Undoubtedly, conflicting methods of procedure and committee jurisdiction have contributed to this situation. There is little evidence to dispute the Jones Subcommittee's complaint that the Department of Agriculture sought to have its Missouri Basin Program (and five supplemental programs) approved by the Committees on Agriculture rather than by the Committees on Public

⁵² House Subcommittee to Study Civil Works, *supra* note 1, at 41-42.

⁵³ See *Hearings*, *supra* note 4, at 27-42.

⁵⁴ See *Hearings before the Subcommittee of the House Committee on Appropriations*, *supra* note 7, pt. 4, at 1959, 2000-03; pt. 5, 1-7, 34-39; *Hearings before Subcommittee of the Senate Committee on Appropriations*, *supra* note 7, at 233.

Works, which have always scrutinized and authorized construction on a project-by-project basis for the Corps of Engineers and the Bureau of Reclamation.⁵⁵ Strategists for the Department assumed that the Committees on Agriculture would lend sympathetic ears to their requests, and they were proved partially correct when the Hope-Aiken Act was passed requiring committee authorization for many, but not all, small watershed projects. It will be recalled, too, that the Jones Subcommittee's intense hostility to the Department's program as flood control in the accepted sense, led the House Public Works Committee and the Agriculture Committee into a wrangle over jurisdiction over the Hope bill and its predecessor the Poage bill in 1953 and 1952, respectively. Thus, the two committees reflected sympathy with different concepts of water policy promoted by different executive agencies. Once the Hope-Aiken legislation was enacted, however, the Senate Committee on Agriculture reflected disenchantment with the provision for committee review of innumerable small projects. Thus, in 1956, when Senator Holland (D., Fla.) expressed alarm over the pending legislation to amend the Hope-Aiken Act, Senator Ellender (D., La.) countered with the reply that⁵⁶

... we have quite a few of our colleagues who are anxious to broaden that. That is why I consulted with Senator Aiken, and a few others and had many of these bills transferred to the Public Works Committee.

He added that

... we are out of our field when we proceed to build dams and projects that are greater than the size indicated by Public Law 566. If you will recall that was one of the bones of contention.

Thus, when Representative Hope's bill to amend the Hope-Aiken Act⁵⁷ was sent to the Senate, it was referred to the Committee on Public Works, which amended the bill to insure itself jurisdiction over projects involving single structures impounding more than 4,000 acre-feet.⁵⁸

Congress is no better organized to deal comprehensively with resources legislation than is the executive branch. The compartmentalization of legislative power, together with the diffusion of executive authority in the area of resources policy, institutionalizes the influence of those pressure groups skillful enough to make their demands heard. The clue to success, in this case, at least, was access to the congressional committees involved. The watershed groups were numerous and strong enough to gain the service of the Committees on Agriculture, once their alliance with the Soil Conservation Service was cemented. Their strength was not great enough, however, to control the Public Works Committees as well, but it was great enough to minimize

⁵⁵ House Subcommittee to Study Civil Works, *supra* note 1, at 43-44.

⁵⁶ *Hearings*, *supra* note 4, at 44.

⁵⁷ H.R. 8750, 84th Cong., 2d Sess. (1956).

⁵⁸ See Senate Committee on Public Works, *Amending the Watershed Protection and Flood Prevention Act*, S. REP. NO. 2585, 84th Cong., 2d Sess. (1956); Conference Report, *Amending the Watershed Protection and Flood Prevention Act*, H.R. REP. NO. 2902, 84th Cong., 2d Sess. (1956).

its hostility to the program. It is also interesting to note that the contest over the amendments in 1956 was principally between the National Association of Soil Conservation Districts and the Farm Bureau. The former charged that the latter had succeeded in influencing the administration of the Hope-Aiken Act to the disadvantage of the soil-conservation enthusiasts. In the test of congressional influence between the two, the soil conservationists won their ends through legislative modification of adverse administrative rulings on the departmental level. Thus, Congress reinforced the autonomy of the Service in the administration of the small watershed program.

D. Federal Relationships

The two primary problems arising from the federal system involve structural adjustments of state and local governments in response to the small watershed flood-prevention legislation and matters of finance.

Official spokesmen and supporters of the Hope-Aiken legislation have repeatedly emphasized the point that the small watershed projects require initiative on the part of local sponsors and merely assistance from the federal government. Except for circumstances in which there can be no local sponsor under state law, the Secretary of Agriculture is not authorized to undertake the planning and construction of a project. Moreover, unlike flood-control projects under the Corps of Engineers, the local sponsors of a watershed project must assume the responsibility and the costs of maintaining and operating completed structures. Nor are the long-term federal loans under this legislation interest-free. Moreover, local sponsors are required to assume some share of the costs of installation. For these latter two reasons in particular, it appears that there must be local units of government capable of assuming legal responsibilities under the Hope-Aiken Act. Should the provisions of this legislation be utilized to their fullest potential, some adjustments in the organization and powers of counties, municipalities, and special districts undoubtedly will be necessary in most states. If the program proves largely to be no more than an extension of the land-treatment measures now undertaken cooperatively by the Soil Conservation Service and the soil-conservation districts, changes of a limited sort will probably suffice in most states.

Interest in this program has been sufficient so far, however, to prompt twenty-seven states to enact legislation to assist local participation in the small watershed projects. Six states have provided for state financial participation in watershed project development; forty-five states have authorized soil-conservation districts to act as local organizations under the provisions of the Hope-Aiken Act; and six states have authorized the creation of soil-conservation subdistricts. Five states have enacted enabling legislation authorizing the creation of watershed districts. In four states, counties have been given some authority to act. In addition, seven states have altered or granted authority to special-purpose districts to secure cooperative action. In several other states, agencies on the local or state level appeared to have sufficient

authority to act.⁵⁹ Although the pattern of organization and authority will undoubtedly vary among the states, *maximum* advantage can be had of federal assistance only if a local agency has powers of eminent domain, taxation, and borrowing, as well as authority to enter into contracts, construct and maintain works, assess benefits and costs, secure easements, rights of way, and water rights, hire technical and administrative personnel, and purchase equipment. Naturally, many projects will be so small that it will not be necessary for such powers to be available in all instances. It would appear, however, that maximum integrated planning and construction can be done only by agencies with such broad authority. In any event, the variety of existing state arrangements makes meaningful generalization here quite difficult.

It may be of some importance to note that, almost without exception, the sponsoring agency for small watershed projects reported by the Department of Agriculture to Congress so far has been a soil-conservation district.⁶⁰ Frequently, also, watershed associations and, in some cases, local units of government, such as municipalities, have shared sponsorship. In some other instances, more than one soil-conservation district is the sponsor, since the watershed is not confined to the existing boundaries of political subdivisions. Where the projects are very small, subdistricts of soil-conservation districts may be large enough to handle the project. It was with this idea in view that six states enacted legislation authorizing such agencies. There is one obvious objection, however, to the use of the soil-conservation district for carrying out such projects. If the Soil Conservation Service prefers to confine its contacts largely to these units which are, in effect, its local administrative satrapies (organized, to be sure, under state law), effective coordinated water-conservation and use planning may suffer from oversight. It is too early to see a clear pattern of development, but it is certainly possible that the Service will be disinclined to expand its contacts beyond the soil-conservation districts. Furthermore, there is no really very effective agency on the national level to encourage or even force breadth of view upon either the Service or the local sponsoring agencies. Congress has given the Service the green light to proceed with flood-prevention works under the same basic system as it has undertaken the on-farm conservation practices under other national programs. Potentially, the small watershed program may amount to more than this; but, at the moment, there is no assurance that it will. No extended changes in local governments will be necessary if the soil-conservation district is to be the chief agency of local administration for this program. Neither, it may be added, will state agencies be required to play an extensive part, unless this legislation is administered to achieve coordinated and integrated results.

Two other features of this program touch on national-state-local relationships; and although their effect cannot yet be judged in detail, it may be useful, for clarity

⁵⁹ See KIRK M. SANDALS AND L. M. ADAMS, *PROGRESS IN STATE LEGISLATION RELATING TO THE WATERSHED PROTECTION AND FLOOD PREVENTION ACT* (Soil Conservation Service, U. S. Dep't of Agriculture, SCS-TP-126, 1956); Smith, *Districts Affecting Water Use and Control*, 41 IOWA L. REV. 181 (1956).

⁶⁰ See *Hearings*, *supra* note 4, at 58-72.

of understanding, to ask to what degree they actually constitute a radical departure from previous flood-control programs in this regard.

Advocates of the program and official spokesmen for the Department of Agriculture have been insistent that the initiative for a project comes only from the people of the watershed concerned. It is evident, however, that the program has been widely advertised in the rural areas of the country by the Department through its official literature, by means of articles written by high Soil Conservation Service officers, by the more than eight hundred watershed associations now in existence, by books and articles written by laymen in behalf of the program, and by the National Association of Soil Conservation Districts and the National Watershed Congress. The fact that more than four hundred fifty applications have been sent to the Department for "assistance" is, in itself, evidence that the missionary work has been well started. In point of fact, then, there is no practical difference between this sort of local initiative and that involved where the Corps of Engineers, for example, is requested—often virtually begged by water-logged inhabitants—to survey and construct works.

Supporters of the program, in and out of government, have also stressed the fact that local sponsors are required to pay a fair share of the costs in relation to benefits. Since the enactment of the 1956 amendments authorizing the federal government to pay the entire cost of constructing flood-prevention and related features, however, it can no longer be claimed that the sponsors bear an average of fifty-five per cent of total project costs. Nor does it appear likely that they will, in the future, be required to meet one-half, or even a very significant portion, of costs, although this demand has been a focal point of attack on federal flood-control policies since the passage of the Flood Control Act of 1936.⁶¹ There is even some doubt that local sponsors ever actually contributed fifty-five per cent of total costs under the original provisions of the Watershed Protection and Flood Prevention Act of 1954. The data submitted to Congress by the Department in support of the early projects for which it sought authorization were so summary in form and, perhaps, incomplete, as to make analysis difficult and conclusions but tentative. These data do, however, cast some light on the financing of the present program.

In reporting thirteen projects to Congress in 1956 for approval under procedures then required by law, the Department divided costs into those to be met by local sponsors and those to be carried by the federal government. It also reported the costs of land-treatment measures and of flood-prevention and other structures as separate major categories, showing for each project the respective local and federal contributions. The two principal items to be financed locally were the costs of easements and rights of way and land-treatment measures.

It is not clear from these reports whether the Department reported merely its estimates of the value of easements and rights of way or actual direct expenditures

⁶¹ See 2 U. S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra*, note 1, at 736-38.

by sponsors to secure these rights. In the development of both the pilot and Hope-Aiken projects in Nebraska, most easements and rights of way have been secured at no cost to the sponsors, although some have been purchased. It is probable that this cost is the principal one now to be met by the local sponsors, and it is one feature which differentiates the program from the flood-control practices of the Corps of Engineers.

Furthermore, although land-treatment costs constituted sixty-one per cent of total "local" costs, or thirty-eight per cent of total project costs, the costs of "technical assistance" were reported as part of the federal government's share of expenses. It is difficult, therefore, if not impossible, to determine what phase of land treatment is involved and who is paying for it. It is possible that this figure merely represents the Department of Agriculture's estimate of the value of the individual farmer's contributions of time and machinery for the installation of land treatment to improve his land through the application of standard conservation practices. On the other hand, it is possible that the cost of virtually all the land-treatment costs reported to be "local" are actually subsidized under other federal programs, especially through the medium of the Agricultural Conservation Payments Program.⁶² A check on this form of federal subvention to farmers revealed that in Nebraska, permanent land-treatment measures, such as terracing and grade control (which are basic to the flood-prevention program), receive a federal subsidy which usually amounts to seventy-five or eighty per cent of costs. Technical personnel who were interviewed admitted that this program is a basic supplement to the small watershed legislation and that farmers' direct cash expenses for this measure were, in most instances, proportionately very small.⁶³ It seems, therefore, that neither Congress nor the public has been given a clear and accurate picture of the share of costs actually being met by the national treasury.

In summary, the federal share of costs is now not only the forty-five per cent originally claimed by the Department of Agriculture, but also the total cost of flood-prevention structures (an estimated additional fifteen per cent of total costs) and an undetermined, but apparently very high, per cent of the costs of land-treatment measures, whether financed under the authorization for the small watershed program or under other programs in the Department or the Forest Service. Persons intimately familiar with these projects, in Nebraska at least, have admitted privately that the total local share of direct costs probably does not exceed ten to fifteen per cent, if that

⁶² The description of each project contains the phrase: "Land Treatment Measures . . . Costs to be met with federal funds provided under authorities other than Public Law 566 are not included. . . ."

⁶³ See U. S. AGRICULTURAL CONSERVATION PROGRAM SERVICE, DEPT. OF AGRICULTURE, NEBRASKA HANDBOOK FOR 1956, at 18-38 (1955). Rates of assistance are given only in terms of unit costs, but interviews with informed persons in the area revealed the high percentage of federal subsidization. One technician, who must remain unidentified, said that most farmers made little or no payment out of pocket for permanent soil-conservation practices, which constitute the backbone of the program. In any event, it seems fair to say that the Soil Conservation Service has not given the public or Congress a clear picture of the out-of-pocket costs of this program to the individual landowners, even allowing for considerable variation in the problems met in different projects. Cf. 2 U. S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 1, at 783.

much. Certainly, then, the small watershed program, in its present form, is scarcely a revolutionary departure from long-established practice in the financing of federal flood-control programs.

IV

CONCLUSION

Judgment of the small watershed program necessarily involves an analysis of the physical and political environment in which it must be executed, for few subjects of national policy present a more complex mixture of "scientific" data and the stuff of politics. Each of these elements, moreover, is modified by the reciprocal interactions of one upon the other. Much of the discussion of resources policy in the past decade or more, however, has been compartmentalized so as to exclude consideration of technical questions from discussion of governmental structure or process.⁶⁴ Many students of government and politics have divorced program issues from problems of administrative structure and have emphasized the latter to the exclusion of the former.

The forms and processes of government take on qualities of deeply cherished symbols in the minds of men who have found them good for their own purposes. More than becoming mere symbols, they acquire the property of universal truths, because those who live with them look upon them as the *causes* of the good life, as in some cases they are. Discussions of intergovernmental relations in resources policy have become enmeshed in this volatile compound, where the benefits and burdens alike are great. There is a disposition, too, to forget that some symbols are not easily transferred successfully from one environment of time or place to another. The Tennessee Valley Authority is a case in point. Although it has been enormously successful in its own locale, all efforts, so far, to duplicate it in other river valleys of the nation have fallen flat. On the level of the federal department or agency, this inextricable relationship between program and organization is apparent. Major resource agencies enjoy the passionate support of their respective followers to the point where all perspective is lost in a wild cacaphony of claim and counterclaim, charge and countercharge. Means become confused with ends.

To say that political institutions are not the works of a divine and systematic order, but images in a mirror reflecting the compromises of social conflict, however, is not to say that study and reflection are useless. It is only to say, as the Sphinx is supposed to have answered a wanderer who requested a distillation of the wisdom of the ages: don't expect too much!

If there is any virtue in establishing a rational nation-wide water resources policy, certain conditions must be met. Policy goals must be set at least within the finite limits of human capacity. In part, however, the establishment of these aims must rest on other accomplishments. Far more basic physical data than are now available

⁶⁴ A notable exception in this literature is NORMAN WENGERT, *NATURAL RESOURCES AND THE POLITICAL STRUGGLE* (1956).

must be gathered, collated, and evaluated. There is an element of interaction between these two, since goals without data are unrealistic and data gathered without goals may be only partially useful, perhaps insufficient. But aside from the need for data—the “scientific” element in the equation—an enormously difficult task on the political level must be performed.

The major water resource programs which are presently being executed by a multiplicity of agencies on the national level are specific responses to particular conditions which have stimulated a variety of segments of the American public to demand governmental action in their particular interests. For example, the Corps of Engineers launched its large scale flood-control work in response chiefly to the disastrous Mississippi River flood of 1927. More recently, when similar floods struck in New England, New York, New Jersey, and Pennsylvania in the fall of 1955, a temporary tidal wave of public sentiment demanded federal action to prevent a recurrence of such destruction. On the other hand, the public clientele of the Bureau of Reclamation is totally different from that of the Corps, geographically and otherwise. The Bureau of Reclamation's major task has been to provide water for irrigation and power in the arid and sparsely-settled areas of seventeen western states. If there is little community of interest, if not outright occasional hostility, between these two agencies, there is equally a lack of broad common interest between the segments of our public who support these agencies, year in and year out, at the congressional hearings on program. An even different clientele supports the small watershed program and its legitimate parent, the Soil Conservation Service. Of course, interagency conflicts occur when the clientele is so mixed as to demand action from two or more agencies, or when one agency seeks to broaden the base of its support and thereby invades the jurisdiction of another. The struggle between the Department of Agriculture and the Corps over the watershed program is a good example of both of these causes.

The concern which the various clienteles have for the programs of “their” agencies is keen, because the stake in terms of self-interest is high. At the same time, one can risk the generalization that the people living in the major urban centers of the eastern half of the country (with some obvious exceptions, like Kansas City and St. Louis) have little active interest in flood-control problems, because they are not touched directly. The Corps of Engineers, however, does have powerful support in many of these areas for its rivers and harbors improvements, which vitally affect commercial interests there. Thus, the degree of public indifference to flood-control problems (although certainly not to the issue of municipal supply) is highest in the great centers of population, wealth, and political power in the United States.

The great task of setting national water policy, therefore—one calling for consummate skill—is the perennial one of seeking out and stimulating a broad national concern for the problem, especially in these great urban areas. Once the task of public education is under way, it will be necessary to use this force as a counter-

weight to the particularism which now marks the scene. Compromises in the national interest must be forced upon the minorities which benefit from splintered efforts. The net result of even this process will be only a partial adjustment, for total triumph by one group is achieved only at the cost of total defeat for another. The complexity and variety of our problem is too great to permit such a result. If, then, the structure and processes of government are the products of social combat, only when this conflict has been joined on a national scale can we confidently expect a major reorganization of programs and the administrative machinery to perform the job.

Congress is so constituted and organized, especially its internal workings, that it has, so far, been able to adjust the clashes of particular interest only by divorcing the agencies from each other and permitting them to go their separate ways, hoping that they will not get in each other's hair too often. Congress is not, and, without forsaking the committee system, cannot readily be, organized as a board of directors to supervise the integrated working of the resources machinery. It can deal only with problems *ad hoc*. The burden then falls upon the executive branch—more particularly, the President. He alone has the position and the means to command public attention, to shape public opinion, in support of his aims. Even he, of course, will have to choose among the competing demands of particular interests, for he cannot be the same thing to all men. He faces the monumental job of forcing a reorganization of administrative machinery in such a fashion as not only to allay the fears of those now comfortably served by the *status quo* in so far as he can, but also to create new agencies which the general public and the specific interests can accept with the hope that they will be well served by the change.

It may be carrying pessimism too far to say that even a President cannot act effectively until crisis is upon us, but the course of history well demonstrates the force of inertia in the affairs of men. For that vast majority of Americans who can confidently expect a twist of the spigot to produce pure water in sufficient quantities to meet the demands of civilization, this issue is too distant to compete with the grinding of meal for daily bread or with the imaginable terrors of the jungle of international politics. The climax, of course, may soon be upon us, for if present estimates are accurate, we shall be prospecting for every drop of water, even in the humid East, within a decade or two. Until then, without leadership, we cannot expect the level of public concern with the issues to rise above the kind of amused incredulousness prompted by the revelation that grizzly bears are administered by one federal department, brown bears in a second, and polar bears in yet a third.

Administrative reorganization and resources planning, no less than politics, is the art of the *possible*.

THE ROLE OF PRIVATE ENTERPRISE IN WATER RESOURCES DEVELOPMENT

ROY E. HUFFMAN*

The problem of private-public relationships and responsibilities in the development, control, and use of the natural resources of the United States has provided the setting for much disagreement regarding acceptable national policy. Most of the argument over the appropriate role of private enterprise in water resources development, unfortunately has involved a maximum of emotion and partisan politics and a minimum of factual analysis. Of necessity, this paper too, will be lacking both in citations of other writings on the subject and in references to studies of the private-public aspects of specific resource development situations. But in a paper written on the same general problem several months ago, this writer referred to his work as "something of a pioneering effort";¹ and the situation has not since changed.

Currently, the private-public controversy is almost entirely an argument regarding the Eisenhower Administration's "partnership" policy for water resource development. The argument is more restricted, however, than the broad problem of public water policy would suggest. The proponents of the partnership policy are concerned, in most cases, only with its relationship to the development of hydroelectric power facilities. They refer to the partnership *power* policy. It is this restricted viewpoint that has been the focus of any discussion and analysis of the role of private enterprise in water resources development. Thus, in commenting on the Hell's Canyon controversy, this writer noted that "the discussion has revolved almost entirely around a comparison of the generating capacity of the alternative proposals vs. the construction costs of the alternative proposals" and suggested that "it seems reasonable to assume some differences would exist with respect to flood control, navigation, recreation and other public benefits and costs."²

It appears, however, that the Eisenhower Administration is finding it necessary to broaden its viewpoint with respect to water resources policy. In discussing the extent to which Secretary of the Interior Fred A. Seaton is modifying the Hell's

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¹ Huffman, *Economic Implications of the Partnership Policy in Water Resources Development*, 38 J. FARM. ECON. 1269, 1270 (1956).

² *Id.* at 1271, 1272.

Canyon position taken by former Interior Secretary Douglas McKay, *Time Magazine* commented:³

Though Seaton, like McKay, holds to the Eisenhower concept of private-public partnership in river development, he takes a broader view of what can be accomplished. Studying the private low dams that McKay favored, Seaton noted that they offered only limited flood control, failed therefore to achieve full development of the Snake River's potential. One high dam . . . would generate more power and provide more flood control than two McKay-type low dams. . . .

It is widely recognized that public policy for water is a national problem of major proportions and pressing significance. Peter F. Drucker illustrated the importance of the problem when he concluded a series of four articles under the overall title of "America's Next 20 Years" with a listing of the eleven most important policy issues facing the United States in the next twenty years.⁴ First on the list was the matter of public policy relating to the water resources problem.

In an attempt to present a complete analysis of a complex problem, this paper will be divided into four major parts. The first will present an historical perspective of the private-public relationships in past resources development in the United States. The second will discuss the requisites of an adequate national water policy to meet the growing demands of the nation. The third will analyze the "partnership" policy with respect to its abilities to meet future requirements. And the fourth will outline this writer's views on the role of private enterprise in the development of land and water resources.

I

PRIVATE ENTERPRISE IN PAST RESOURCES DEVELOPMENT

The idea that private enterprise should function as a "partner" in the development of natural resources is not new. Throughout the history of this nation, private enterprise and public effort have collaborated in the development and use of land and water resources. This sort of an approach has been the accepted procedure as the vast land areas were settled and developed. This writer has suggested in more detail elsewhere that the major goal of resource development is to increase the capacity of the resource base to support private enterprise.⁵ It cannot be otherwise in a capitalistic economy. Thus, the federal government has sponsored programs and policies designed to improve the usability of the natural resources of the nation for private enterprise. Public programs to develop hydroelectric power and construct irrigation and drainage projects are not too far removed from our historical experience wherein the federal government subsidized canals and wagon roads, made

³ *Time*, Feb. 25, 1957, p. 25, col. 3.

⁴ *The Coming Labor Shortage*, *Harper's Magazine*, March 1955, p. 27; *The Promise of Automation*, *id.*, April 1955, p. 41; *The New Tycoons*, *id.*, May 1955, p. 39; *Eleven Coming Issues in Politics*, *id.*, June 1955, p. 52.

⁵ Huffman, *The Water Resource Problem*, in FARM FOUNDATION, NATIONAL CONFERENCE ON INCREASING UNDERSTANDING OF PUBLIC PROBLEMS AND POLICIES 35 (1955).

land grants to the railroads, and provided free public land to private enterprisers of all kinds.

Early water resources development was concerned with transportation through canal building and rivers and harbors improvement, and with agriculture through irrigation and drainage. The transportation facilities involved a large proportion of public activity from the beginning, but the early attempts to expand agriculture through water resources development was based to a considerable extent on private enterprise. Those interested in growth of the irrigated areas became skeptical at an early date regarding the ability of private enterprise to do the job, however, and began to push for public programs. Public policy fluctuated among public subsidy for private development, development by the states, and development by the federal government. Out of this situation, the Bureau of Reclamation evolved. In the meantime, the Army Corps of Engineers had become well established in water resources development in aid of transportation and for flood control.

Interest in the multiple-purpose aspects of water resources development was evident at an early date. Many early water projects presented opportunities for use other than the one purpose recognized in the original plans and construction. The actual multiple-use features of projects, however, were largely incidental and accidental. Limited quantities of hydroelectric power occurred as a by-product of irrigation and flood-control projects, but there was no stated policy of government participation. Muscle Shoals on the Tennessee River was probably the first project to be discussed in the multiple-purpose context, but the Boulder Canyon Project (Hoover Dam) was the first development authorized as a truly multiple-purpose project.

The concept of multiple-purpose development of resources expanded from initial application to individual projects to the development of entire river basins. Anshen and Wormuth note this evolutionary process beginning with Muscle Shoals:⁶

The project was one of the most celebrated political footballs of the 1920's. Farm groups argued for a long term lease of the facilities to private operators who would manufacture fertilizer. The power industry favored a lease for private power generation. The proponents of public ownership wanted the government to operate the facilities. While these issues were in debate, the scope of the problems involved was being steadily enlarged. The operation of the facilities for the generation of power was being urged as one part of a coordinated program that would embrace navigation, irrigation, flood control, and reforestation, amounting to a program for the economic and social rehabilitation of the entire Tennessee Valley area.

The Tennessee Valley is known throughout the world as an example of comprehensive development of land and water for multiple uses. The idea of comprehensive development of resources has been carried into the other great river basins of the nation, but without the coordinated organizational structure of the Tennessee Valley Authority. The attempt to establish valley authorities in other regions reached its peak in 1945, with the introduction of an omnibus authority act which

⁶MELVIN ANSHEN AND FRANCIS D. WORMUTH, *PRIVATE ENTERPRISE AND PUBLIC POLICY* 353-54 (1954).

would have divided the continental United States among nine authorities.⁷ The bill was not passed, and, although valley authorities continue to be discussed, other forms of organizational structure have come to the fore in various attempts to secure the coordinated development and operation which has been achieved in the Tennessee Valley. Baumhoff has noted in his study of the Missouri Basin that the coordinated development of the TVA is generally accepted as necessary but that many persons are on record as opposed to the valley-authority type of organization. He suggests that the answer for the Missouri Basin may be a "Missouri Valley Anti-Authority Authority."⁸

Much of the opposition to the Tennessee Valley Authority is related to the private-public power argument. This is true also of opposition to the establishment of valley authorities in other regions. Although public power development has been carried on in other river basins, such as the Columbia, without a valley authority, one governmental organization has not been dominant as in the Tennessee Valley. The implications of comprehensive development, including the basic interrelationships of land and water, are generally ignored or not understood.

The narrow viewpoint of one spokesman for private enterprise in water resources development is evident in the five lectures given by Ben Moreell at the University of Chicago.⁹ Admiral Moreell is retired from the Civil Engineer Corps, United States Navy, and was Chairman of the Task Force on Water Resources and Power of the Second Hoover Commission. His lectures include virtually no mention of multiple use of resources or of multiple-purpose projects. Admiral Moreell is disturbed that foreign engineers and administrators want to see the TVA. He writes:¹⁰

Forgotten is the fact that Hoover, Shasta, Grand Coulee, Fort Peck . . . are among the highest and largest in the world and they were built by the Bureau of Reclamation or the Corps of Engineers, not by a valley authority.

There is no recognition of the fact that foreign visitors are interested in the TVA as an attempt at comprehensive and total development of resources; Admiral Moreell rather assumes the typical engineering viewpoint that accomplishment is measured by the "highest and largest" dam. On the basis of such a criterion, he should be an advocate of the high dam at Hell's Canyon, but it is obvious he is not. Admiral Moreell concludes that public activity in hydroelectric power development is "all wrong."¹¹

Lack of understanding of the fundamentals involved is further evident in Admiral Moreell's skepticism regarding watershed management. He is probably on firm ground when he questions the campaign for "an upstream small-dams approach as a complete alternative to any other measures for flood control." His contention that there is little evidence of the value of land treatment and watershed manage-

⁷ See ROY E. HUFFMAN, *IRRIGATION DEVELOPMENT AND PUBLIC WATER POLICY* 168-69 (1953).

⁸ RICHARD G. BAUMHOFF, *THE DAMMED MISSOURI VALLEY* 291 (1951).

⁹ BEN MOREELL, *OUR NATION'S WATER RESOURCES—POLICIES AND POLITICS* (1956).

¹⁰ *Id.* at 85.

¹¹ *Id.* at 188.

ment because of the "marked failure of the Department of Agriculture to provide data for objective analysis by disinterested engineers and scientists" and his statement that the advocates of land treatment and watershed management "merely want Federal funds placed in the hands of other agencies for other kinds of works," however, are not so well founded.¹² These views conform to the widespread belief that all worthwhile economic activity can be determined by the private-profit motive and that no benefits exist unless they can be measured in dollars and cents. The problem of appropriate recognition of nonmonetary benefits of development is crucial in the private-public controversy.

These lectures have been discussed in some detail because they set forth clearly the viewpoint at one extreme. Somewhere between this viewpoint and the other extreme of complete public domination is to be found the answer to the role of private enterprise in water resources development.

II

THE NEED FOR AN ADEQUATE NATIONAL WATER POLICY

The growing demand for water in the United States is focusing attention on the importance of an adequate national water policy. The increasing volume of water required is a result of two factors: population growth and greater per capita consumption.

The United States is experiencing one of the periods of most rapid population growth in its history and is now one of the fastest-growing nations in the world. There is some evidence that population experts consider the high birth rate to be a temporary phenomenon,¹³ but each year for the past decade the number of births in the United States has continued to climb. For the past three years, the number of births has exceeded 4,000,000 each year.¹⁴ The result in total population has been startling. In mid-February this year, the Bureau of the Census estimated that the population of the United States had reached 170,000,000.¹⁵ This compares with a 1947 forecast prepared by Whelpton for the Bureau of the Census which projected the population to 156,775,000 in 1960 and 169,801,000 in 1975.¹⁶ As recently as 1952, the President's Materials Policy Commission assumed 193,000,000 people in the United States by 1975.¹⁷ Present trends indicate, however, that we will approximate that figure by 1965. Current estimates project a population of 228,500,000 in 1975 on the basis of the present birth rates.¹⁸ These figures alone are impressive, but the

¹² *Id.* at 141.

¹³ The population projections issued by the Bureau of Census in 1953 included a series that assumed a decline in the birth rate to prewar levels by 1960, with fertility remaining constant at that level to 1975. See U.S. BUREAU OF THE CENSUS, DEP'T OF COMMERCE, CURRENT POPULATION REPORTS: POPULATION ESTIMATES (Series P-25, No. 78, 1953).

¹⁴ See U.S. BUREAU OF THE CENSUS, DEP'T OF COMMERCE, CURRENT POPULATION REPORTS: POPULATION ESTIMATES (Series P-25, No. 153, 1957).

¹⁵ See Associated Press release, Feb. 15, 1957.

¹⁶ P. K. WHELPTON, FORECASTS OF THE POPULATION OF THE UNITED STATES 41 (1957).

¹⁷ 1 PRESIDENT'S MATERIALS POLICY COMM'N, RESOURCES FOR FREEDOM 7 (1952).

¹⁸ See U.S. BUREAU OF THE CENSUS, DEP'T OF COMMERCE, CURRENT POPULATION REPORTS: POPULATION ESTIMATES (Series P-25, No. 123, 1955).

impact on water resources is not fully evident until they are coupled with per capita water requirements.

The population projections noted above can be thought of roughly as involving a one-third increase in population in the twenty years ending in 1975. At the same time, we are told that the nation's water requirements in 1975 will be double the amount used now.¹⁹ This large increase in per capita use is a result of greater demand in all uses—domestic, industrial, agricultural, and recreational. The scope of the water problem facing the nation, and its complexity, thus come into clearer focus when viewed in relation to population growth *and* per capita use. It is evident that the contribution to be made by private enterprise in meeting the problem and the extent of public responsibility are important to the future of the United States.

Concern regarding the water resources problem has been most evident in those locations where it is obvious that water is a limiting factor in economic growth. California and some other states are particularly concerned with this phase of the problem. Civilizations have flourished on the basis of the development and use of their water resources. The remains of great water facility structures scattered over the face of the earth attest to the importance of water resources to the growth and stability of an economy. Water resources development was significant in the existence of such civilizations as Babylonia and in the long history of Egypt, China, and India. The nations which flourished in the Mediterranean area, including Rome, Carthage and early Spain, leaned heavily on the development of their water resources. Prehistoric people in the Americas, including the Incas of South America and the Pueblo Indians of our own states of Arizona and New Mexico, reached an advanced stage of water development and use. It seems obvious that water resources have been basic to the growth of many of the great civilizations of the past. We do not know why many of these nations vanished from the scene, but there is evidence that at least some of them failed because their water resources failed. In some instances, it appears that the civilizations broke down because of a failure to recognize the basic interrelationship of land and water.

Failure to recognize the critical importance of water as a basic resource is not a state of mind which man has outgrown. It has been a long and difficult process in this country to secure an adequate appreciation of the problem, and the battle is not yet won. There are still many people who seem to ignore the facts around them and feel that water should be a free good, or at least nearly so. This lack of understanding of the scarcity of water relative to demands is the key to much of our problem in securing an adequate recognition and understanding of the water resources problem. Then, too, there is the idea held by some that if you ignore a problem, it will somehow disappear.

It seems rather obvious, then, that the federal government has a major obligation to formulate and carry out a long-range policy for water resources development in the United States. I believe that the federal government has a responsibility in the

¹⁹ PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, WATER RESOURCES POLICY 5 (1955).

resources field akin to its responsibility for national defense. A nation which loses or outruns its resource base is doomed to extinction or a permanently low level of living. The Administration which took office in 1952, however, proposed to reduce federal responsibility for the protection and development of natural resources and to leave much of the responsibility to private enterprise. It has been largely as a result of the views of individual citizens as expressed at the ballot box that the federal government now appears to be resuming its responsibilities for insuring an adequate national water policy for today's population as well as generations yet unborn. It would appear to be highly significant that the disapproval of a policy which reduced federal responsibility in the resources field was concentrated in the Columbia basin, where public development of water resources had provided the foundation for noteworthy expansions in private enterprise.

The manner in which private enterprise and public effort should be combined into a national water policy remains the important question. It cannot be assumed that the question has been answered merely because we are said to be operating under a "partnership" policy. As noted earlier, resources development in the United States has always involved varying degrees of private and public effort. The heart of the problem is concerned with the proportions of private and public participation necessary to insure the future of the nation.

The federal government has given considerable attention to the water resources problem. Over the years, the legislative and executive branches of government have established a number of study commissions and committees on water resources. The six-year period, 1949-55, saw the release of reports from the First Hoover Commission (1949),²⁰ the President's Water Policy Commission (1950),²¹ the President's Missouri Basin Survey Commission (1953),²² the Second Hoover Commission (1955),²³ and the Presidential Advisory Committee on Water Resources Policy (1955).²⁴ A mass of data and many recommendations are available. Future water policy has not been determined at state, regional, or national levels. The importance of the problem, however, has been thoroughly established and documented.

III

ADEQUACY OF THE PARTNERSHIP POLICY

At this point, it appears appropriate to evaluate the "partnership" policy which emphasizes the joint participation of public agencies and private enterprise in the development of the nation's resources. The partnership policy must be analyzed mainly from the standpoint of intent rather than performance. There is little, if any,

²⁰ U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, TASK FORCE REPORT ON WATER RESOURCES PROJECTS (1949).

²¹ PRESIDENT'S WATER RESOURCES POLICY COMM'N, A WATER POLICY FOR THE AMERICAN PEOPLE (1950).

²² MISSOURI BASIN SURVEY COMM'N, MISSOURI: LAND AND WATER (1953).

²³ U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, REPORT (Vol. 1, WATER RESOURCES AND POWER) (1955).

²⁴ PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, *op. cit. supra* note 19.

experience to which one can turn in the way of functioning projects or programs demonstrating the partnership policy in action.

The Eisenhower Administration's partnership policy for natural resources development has been outlined in a number of places. Three points are quoted here:

(1) . . . I believe that the Nation must adhere to three fundamental policies: first, to develop, wisely use, and to conserve basic resources from generation to generation; second, to follow the historic pattern of developing these resources primarily by private citizens under fair provisions of law, including restraints for proper conservation; and third, to treat resource development as a partnership undertaking—a partnership in which the participation of private citizens and State and local government is as necessary as is Federal participation. . . .

. . . . The Federal Government must shoulder its own partnership obligations by undertaking projects of such complexity and size that their success requires Federal development.²⁵

(2) One of the primary considerations in establishing the partnership power policy has been the need for an adequate supply of power. . . . Here is where our power partnership policy enters. The idea is very simple. It is based on the concept of individual initiative with government cooperation. Because of the large expenditures required to assure that our power needs will be fully met, this department has encouraged state and local public bodies and private organizations to supply their own power needs and to share with the Federal Government in the development of our water resources. Thus, the Federal Government will be in a better position to contribute toward the cost of those necessary projects which, because of size or complexity, are beyond the capability of state or local groups to finance or which provide benefits of a broad public nature.²⁶

(3) In our concept local groups are those people with legitimate interests in developing the resources of an area. In this term we include: private persons, state and other political subdivisions, public power districts, irrigation districts, public utility districts, corporations, privately-owned public utilities, or other responsible non-Federal groups regional in character. If they are financially capable of developing the natural resources of an area, we are willing to be partners with them or, if able, they should proceed alone. We do insist that projects will proceed in a comprehensive manner to assure maximum development of our resources for multiple uses including power, fish and wildlife, recreation, municipal and industrial water, irrigation and other beneficial uses.²⁷

The above statement suggests a greater degree of federal responsibility in resources development under the partnership policy than others concerned with the policy have recognized. If this statement by the President is taken as the charter for the partnership policy, it is quite possible to give adequate consideration to the public interest and the long-run needs of the nation. In theory, the partnership policy is a sound and workable plan. As interpreted for practical application by those called upon to administer it, however, much of the generally accepted area of federal responsibility is abandoned and the policy becomes one of expanding hydroelectric power develop-

²⁵ Eisenhower, *The State of the Union*, 101 CONG. REC. 122 (1955).

²⁶ Statement of Secretary of the Interior Douglas McKay to the House Committee on Interior and Insular Affairs, March 30, 1955, as reported in *Evolution of Power Policy*, 34 CONG. DIG. 293, 294 (1955).

²⁷ *Ibid.*

ment by private enterprise and largely ignoring the associated multiple uses of the resources involved.

President Eisenhower emphasizes in the partnership policy the federal responsibility for developing projects which, "because of size or complexity," are beyond the capability of state or local effort. If he had said, also, that the alternatives to federal development must be equivalent projects in terms of the benefits produced, the choice between private and public development would have been more clearly drawn. The apparent reversal of administration viewpoint with respect to Hell's Canyon, referred to earlier in this paper, confirmed the contention that the proposed private development is not an equivalent project. It is becoming daily more evident that the United States is not a nation of inexhaustible resources with the choice of using its resources wastefully or only partially. In the case of water, it will be necessary to make the most complete use possible of the available supply if we are to fill all of our requirements. In view of population growth, higher dietary levels, and the loss of good agricultural land to nonagricultural uses, the same may be true as well for land resources. Crop surpluses may turn out to be a temporary phenomenon in the history of the nation.

The partnership policy, as laid down by President Eisenhower, insists that "projects will proceed in a comprehensive manner to assure the maximum development of our resources for multiple uses including power, fish and wildlife, recreation, municipal and industrial water, irrigation and other beneficial uses." It is in relation to the complete development of resources on the basis of multiple uses that the application of the partnership policy appears weakest. There is little evidence that private enterprise is concerned with other than power generation and little indication that private enterprise understands the importance and complexities of multiple-purpose development. It is understandable that private enterprise would be interested in the uses which will produce revenue and not concerned with the uses producing nonmonetary benefits. The nonmonetary benefits arising from water involved in recreation, fish and wildlife, and flood control must be integrated, however, with the revenue-producing uses if the partnership policy is to be as effective as it should be. The simple solution would be to ignore the nonmonetary benefits, and even some of the less lucrative revenue-producing benefits, and concentrate on such a use as power generation. This procedure, however, would involve sizable losses to society in unrealized benefits. It should be noted, too, that the lost benefits would be those which are increasing in importance as a result of population growth, greater industrialization, shorter work weeks, more leisure, and a growing demand for recreational resources.

IV

PRIVATE ENTERPRISE IN FUTURE RESOURCES DEVELOPMENT

Private enterprise operating within our democratic framework of government has been the most important factor in the development of the United States as we know

it today. The challenge to private enterprise now is to make its contribution to the future resources development of the nation in such a way as to secure the maximum in benefits. This implies a recognition on the part of private enterprise of the broad range of the public interest in how the resources of the nation are developed, controlled, and used.

It is not necessary that the private-public relationship follow the same pattern in all resources development situations. Power resources are an example. Most industrial countries have developed their power resources under a system of public ownership. The United States has depended primarily on private ownership and public regulation. Unless private development of resources can meet the needs of the nation, it seems likely that regulation or outright public ownership may be expanded in the period ahead. There are many "in between" possibilities, however, in integrating private and public effort in power facilities. A private firm might retail power from public generating and distributing facilities. A private firm might own the retail facilities and the distribution lines while receiving power from a public dam and power house. A private firm might own the retail facilities, distribution lines, and the power house in a public dam. A private firm might build the dam and own all the facilities to the ultimate consumer. In the last case, the public could subsidize the private firm for the nonmonetary public benefits arising from the dam. Such an arrangement would make possible full multiple use of a resource situation on the basis of a private-public partnership.

If private enterprise is to meet its obligations in resources development, the leaders in the private companies have a further challenge facing them. In addition to adequate consideration of the multiple-use potentialities of individual structures, private enterprise must fit its developments into basin-wide management of resources. Just as multiple-purpose development of an individual structure will maximize the benefits of a particular site, so will comprehensive and integrated development of a river basin maximize the benefits of a river system. This is a complex problem, indeed. Basin-wide development and management of resources would not be simple if all the structures were publicly owned. The problem is highly complicated if some structures are owned by one or more private power companies, others are owned by federal, state, and local units of government, and watershed treatment and management occurs on both publicly and privately-owned lands.

The extent to which public development of resources expands and dominates the economic activity of the nation will be determined by private enterprise. If private enterprise demonstrates a willingness to develop and manage resources in the broad framework necessary to meet the rapidly expanding needs of a growing population, then private enterprise can be a dominant partner in the future of resources development, as it has been in the past. If not, the people themselves will insist that government, through regulation and demonstration, force private enterprise to adopt the same enlightened viewpoint toward natural resources as it now accepts with respect to human resources as a result of regulatory measures and government programs

affecting wages and hours, working conditions, social security, and many other fringe benefits. It should be recognized that many private enterprisers, individually or in partnership with public programs, are operating in this enlightened framework.

It cannot be denied that public programs have demonstrated in a practical manner some of the theoretical concepts of resources development and use which were not accepted by private enterprise. For example, the Tennessee Valley Authority demonstrated conclusively the elasticity of demand for electrical energy. Anshen and Wormuth state the situation very well as follows:²⁸

By showing that lower rates led to increased consumption which more than compensated for rate reduction, it stimulated expansion into new markets by privately owned utilities. This is a task which in all probability could have been performed only by public ownership. Public utilities are conservative, partly because of their monopoly position and partly because they know that in the long run, despite all their exertions, their earnings will be pretty largely limited by the regulatory authority to a fixed return on their valuation. The prospective rewards of innovation are much outweighed by the risks. Nor could a regulatory commission constitutionally compel a public utility to embark upon speculative rate reductions in the hope that the resulting increase in consumption would compensate for the lower selling price per power unit. Yardstick competition comes down in the end to the use of public "risk capital" to pilot the way for expansion of private enterprise.

In conclusion, then, this writer suggests that the maximum in combined private and public effort will be necessary to meet the needs of the nation's growing population and expanding economy in the next quarter of a century. The public has pretty well demonstrated its acceptance of public development of resources if private enterprise does not do the job. It appears that the role of private enterprise in water resources development in particular and resources development in the broadest framework will be largely determined by the record of performance made by private enterprise.

²⁸ ANSHEN AND WORMUTH, *op. cit. supra* note 6, at 288.

NATIONAL WATER RESOURCES ADMINISTRATION

JAMES W. FESLER*

The federal government's relation to water resources is perplexingly complex. So commonplace has such an observation become that the truth it expresses may require revitalization by example. Take Monday, February 4, 1957, an ordinary day of proceedings in the United States Senate and House of Representatives.

Senator Ives introduced and explained a bill for construction of a hydroelectric power project at Niagara Falls by the New York State Power Authority.¹ Senator Neuberger, from across the continent, introduced and spoke for a resolution proposing a Columbia River basin account, through which federal power revenues would help finance irrigation and reclamation projects.² Senator Beall obtained unanimous consent to publish in the *Congressional Record's* appendix an editorial on pollution problems of the upper Potomac River.³ Senator Symington protested alleged neglect of Missouri in the administration of drought relief by Secretary of Agriculture Benson.⁴ The Senate adopted Senator Murray's joint resolution for a National Conservation Anniversary Commission to celebrate the fiftieth anniversary of the 1908 conservation conference of state governors called by President Theodore Roosevelt.⁵ Senator Carlson seized this opportunity to urge Senator Murray and his Committee on Interior and Insular Affairs to give favorable consideration to Senator Carlson's bill to establish a commission on the conservation, development, and use of renewable natural resources and particularly "problems of drought, decreasing water supply, and the wind erosion of our soil."⁶

In the other wing of the Capitol, Representative Cooley explained for his Committee on Agriculture why the drought relief bill was delayed by objections of the Department of Agriculture,⁷ and Representatives Poage, Rogers, Hoffman, Fisher, Hays, and Christopher expressed sharply their disappointment at the delay.⁸ Representative Perkins addressed the House on the flood disaster in eastern Kentucky (and West Virginia, Virginia, and Tennessee).⁹ The Board of Commissioners of the

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¹ 103 CONG. REC. 1290-91 (daily ed. Feb. 4, 1957).

² *Id.* at 1294-95.

³ *Id.* at 1301-02.

⁴ *Id.* at 1310.

⁵ *Id.* at 1335-39, 1353-54.

⁶ *Id.* at 1295.

⁷ *Id.* at 1310-11.

⁸ *Id.* at 1335.

⁹ *Id.* at 1348-53.

District of Columbia submitted draft legislation authorizing it to construct two bridges over the Potomac River.¹⁰ The House Committee on Interior and Insular Affairs submitted a report on a bill to amend the Small Reclamation Projects Act of 1956.¹¹ Bills were introduced for a fish hatchery, for return of certain lands to their former owners at the Buford Dam and Reservoir in Georgia, for appropriations for continued construction of the Calumet-Sag Channel in Illinois, for "certain works of improvement" in the Niagara River, for inclusion of "additional works of improvement" in the Watershed Protection and Flood Prevention Act, for congressional approval of a Great Lakes Basin Compact, and for preventing certain lake levels from dropping excessively because of the use of hydroelectric generators.¹²

Variety and complexity are at the heart of the problem of organizing for water resources administration. The observer feels as if he were looking into a steadily rotating kaleidoscope in which each mosaic pattern yields to another before the first can be fully registered on the consciousness. Partly for simplicity's sake, two possible ways of halting the rotation will be excluded from consideration here. One effort to weld variety into a patterned unity is the valley authority. Another is the proposal to devise a truly joint regional instrument of the states and the federal government. These will be assumed, without prejudice, to be unavailable as solutions on a nation-wide basis. Our concern, on this assumption, will be the organization of the federal government for its water resources responsibilities.

I

THE SEARCH FOR THE ORGANIZING IDEA

Many official inquiries attest that the federal government is poorly organized for the development and execution of water resources programs. There is less agreement on what should be done. This is, in large part, because there is no consensus on a definition of the problem, and so on the starting point for organizational analysis. For organization is rational only as it relates to problems expressible in nonadministrative terms. Such problems, for example, might include agricultural production, government printing, children, labor, the South. Because so many problems clamor for governmental attention, only a few can be recognized as "organizing ideas" at the higher levels of organization. We cannot indefinitely multiply executive departments or even "independent establishments."

Selection of the most important organizing ideas is, therefore, mandatory. Such a selection is high policy, and so properly political. It may be done well or ill, by conscious choice or by indifferent acceptance of historical patterns. It will never be wholly satisfactory, for the concerns of government are too numerous and interrelated to fit neatly into ten or twenty or thirty tidy compartments. The organizational pattern may fail to settle which agency should have power finally to determine the contents and format of a government pamphlet on the children of migratory agricultural laborers in the South. But some problems, such as how much money the

¹⁰ *Id.* at 1357.

¹² *Id.* at 1358-59.

¹¹ *Ibid.*

federal government should spend where on construction of what kinds of dams, may be so important to the public that these problems thrust themselves up into the level of important organizing ideas. Where we are in history helps to determine this agenda of major public concerns. Water resources, it is said, has now emerged as among the critical concerns of our time.

Whether "water resources" is the true organizing idea for the kinds of functions that should be grouped together administratively is not so clear as many assume. We need to have a clear statement of the problem to which administrative organization is meant to be responsive. There is no agreement on what that statement should be.

There are three principal ways of visualizing the nature of the problem. The first sees a single "whole"—water, for example—as the focus. The assumption is that if all executive agencies' functions related to this whole were brought together or otherwise harmonized, the problem would be solved. The second sees a process with distinct, and so separable, stages; planning, construction, operation would be illustrative in the water resources field. If each stage is unified, one need not worry so much about administrative unification of the whole process. The third sees legislative policy as the principal unifying or divisive element. The assumption is that if Congress would bring its policies, as embedded in statutes, into a consistent whole, we could abandon the emphasis upon administrative realignments.

Those who see a "whole" to which administration might be attuned do not agree on what that whole is. Yet, this needs to be settled, for it is the clue to determination of which functions and agencies need to be brought together organizationally.

One starting point might be *water*. At its simplest, this means water in the channel, with an emphasis on navigation, flood control, and fishing. But from this starting point, one quickly moves to recognition of the flow of the water *to* the land for irrigation and for water supply; and then the flow of water *from* the land, which raises questions of on-land measures to purify the flow by pollution control and to reduce the rate of flow and of siltation by forestation and other water-holding practices. This may all be considered an approach based on water-in-the-channel, though already land as it relates to water has come so clearly within the limits of the concept that what has been embraced has potentially startling administrative implications.

The shift to *natural resources* as a starting point for thinking about administration seems almost imperceptible. But water is no longer the touchstone for assertions of relevancy. Now water and land are seen so married by nature that "land-and-water" can be the focus. Subsoil mineral resources expand the focus further.

To move from either water or natural resources to the idea of a whole *drainage basin* introduces two new ways of visualizing the problem around which organization might be designed. First, it is an advanced step in the historical process marked by successive shifts from the single-purpose, single-dam approach, to the multiple-purpose designing of single dams by a single agency, and then to the multiple-

purpose designing of single dams by collaboration among several agencies. We are, it appears, moving past the point when each dam, even if multiple-purpose in design, can be treated as an isolated project unrelated to upstream and downstream dams. But this interrelating of channel works is not the full realization of the basin concept. For the basin approach tends to absorb the land-and-water unity concept and to move on to the general resource base of the basin's economy.

Second, the basin concept introduces a new kind of "whole" into organizational thinking. The basin is an areal whole, as distinguished from "water" or "natural resources," which would be termed functional wholes. To attempt to organize around the idea of a series of areas such as basins introduces new problems of definition, for basins vary in size, have interrelations with neighboring basins,¹³ and are contributors to and beneficiaries of national and international policies and events.

Water, natural resources, and the basin concept may all be brought into a new focus—that of *economic development*. This, too, is a point that can be reached by so natural a progression that it hardly seems a distinctly different basis for administrative organization. Water, partly because of its fluid gold quality for agricultural development in the arid West, and partly because of its white coal quality as a yielder of hydroelectric power for industrial development in underdeveloped regions, acquires a strategic significance as a convenient lever with which to plan and effect economic growth. Yet, it is but one lever, and such other bases of economic development as thermal power, transportation facilities, mineral deposits, labor force, and research and education are factors demanding consideration in their own right.

Water seems a convenient taking-off point for analysis, policy-making, and administrative action pointed toward economic development. But there are alternatives that seem equally plausible. Water may carry one logically to hydroelectric power; hydroelectric power may carry one to some thermal power for "firming up" the hydroelectric power on those occasions during the year when the water flow cannot deliver energy at the peak level; from this, especially if hydroelectric power sites are exhausted and demand continues to increase, one may be carried to thermal power as the dominant energy source. The Tennessee Valley Authority has traversed this road leading away from the river. In 1950, hydroelectric plants produced ninety per cent of the system's power requirements; in 1956, steam plants produced seventy-two per cent of those requirements.¹⁴ Perhaps, then, energy sources, rather than

¹³ Even the Tennessee Valley, so long an areal focus for resources development, does not stand alone. A former chairman of the board of the Tennessee Valley Authority writes: "The stream flow of the Tennessee accounts for some 25 per cent of the Ohio's discharge into the Mississippi. . . . On the lower Ohio and Mississippi rivers this [TVA] system can reduce flood crests by 2½-3 feet, depending on the origin of the flood. . . ."

" . . . Half of its [TVA's] flood-control benefits accrue outside the Valley on the lower Ohio and lower Mississippi as far south as the mouth of the Red River." GORDON R. CLAPP, *THE TVA, AN APPROACH TO THE DEVELOPMENT OF A REGION* 17, 86 (1955).

¹⁴ TVA ANN. REP. 3 (1956).

water, are the key to economic development and, hence, the idea around which organization should be built.¹⁵

Economic development is sometimes equated with regional development. Yet, regional development has a specifically areal focus, while economic development (or economic planning) does not. Observe, for instance, the possibility that thinking so much of regional development of underdeveloped regions like the South and the West may lead to neglect of the relatively long-developed industrial East and Middle West. Here, the problems of out-migration of certain industries, in-migration of new elements for the labor force, accelerated urbanization, water supply, water pollution, shortage of recreational areas, and floods may call less for stimulation of economic development than for delicate adjustment of competing interests in an already well-developed economic and social complex. National considerations may well come to the fore, not excluding the national concern with the *relative* development or decline of the several regions of the country and, so far as national funds and energies are called upon, with the optimal disposition of these investments for promotion of the national interest. In such considerations, national defense may loom as large as will equitable balance in the development of regions. To organize for the making and execution of these major strategic decisions that impinge on regional development may then be thought the principal challenge to our administrative capacity.

Water, natural resources, the drainage basin, economic development—each is a possible focus for administrative organization. But *public works* are yet another alternative. The construction of dams, irrigation works, water-purification plants, and electric-transmission lines, seems the most obvious manifestation of governmental efforts to bring water into the service of the people. The construction of thermal power plants, highways, post offices, federal office buildings, hospitals, and other public buildings has potential significance for the economic condition of each region and of the nation at large. So much is this true that since early New Deal days (and even earlier), there has been recurrent effort to accumulate in good times a

¹⁵ The Report of the President's Materials Policy Commission chose energy resources as a coordinative focus:

"The Commission is strongly of the opinion that the Nation's energy problem must be viewed in its entirety and not as a loose collection of independent pieces involving different sources and forms of energy. . . .

"Ideally, the Nation should have a comprehensive energy policy and program which embraces all the narrower and more specific policies and programs relating to each type of energy and which welds these pieces together into a consistent and mutually supporting pattern with unified direction. . . . [T]he multiple departments, bureaus, agencies and commissions which deal with separate energy problems must be less compartmentalized—more aware of the problems of coal vis-à-vis oil and gas; of waterpower as compared with lignite as a source of electricity; of the effects of pipeline regulation, for example, on oil imports from Venezuela. . . .

" . . . [A] comprehensive understanding can be achieved only if one central agency of the Government has clear responsibility for assaying trends and policies throughout the entire energy field. The scrutiny will be effective only to the extent that the same agency carries out the broad analysis required to appraise the various specific energy policies and programs for which today responsibility is scattered among a score of agencies." 1 PRESIDENT'S MATERIALS POLICY COMM'N, *RESOURCES FOR FREEDOM* 129, 130 (1952). Elsewhere, the same Commission starts from water, instead of energy resources, and urges "integrated action in each major drainage basin" and endorses the proposal of a board of review to appraise costs and benefits of proposed basin development projects. *Id.* at 55.

shelf of public works projects that can be quickly undertaken when a depression threatens. Note how swiftly the ground has shifted though. For now public works of all sorts are thought to warrant unified handling through central planning and activation. Add to this the appealing thought that if all the engineering talents of the government were in one department or bureau, there would be economies and a high *esprit de corps*, and one is well on the way to organizing around an idea that is wholly distinct from the other "organizing ideas" that have been reviewed.

Recapitulating, one way of visualizing the nature of the problem that we confront organizationally is to see a single whole that can serve as the focus for organization. Which whole we see matters a great deal, for a rational administrative structure must start from some premise about the nature of the substantive problem with which government is attempting to deal. Without seeking to develop any merely speculative hypotheses about the definition of the substantive problem, we have seen that, in fact, reasonable men define the problem quite differently. Some see water per se; some see land-and-water or natural resources as a kind of seamless web; some see economic development or planning (and that in such various guises as basin-based, regional, interregional, and national); and some see government as a great builder of physical structures—some on drainage systems, but others on land and unrelated to water or other resources.

It is common to assume that all functions related to a particular substantive problem of government should be brought together in a single agency. This has been implicit in what has been said to this point. But there are other ways of looking at organization than in this all-or-nothing way. One of the other ways, if we are thinking of water resources development, rests on a sharp distinction among planning, constructing, and operating the projects. Planning may be thought of as involving the selection of projects to be built (or recommending them to higher bodies for authorization and financing). This may turn on economic feasibility, engineering feasibility, relation to other developments on the river system and on land, indirect social benefits and costs, relative importance of other regions' proposals, and so on. It may also require a consideration of the multiple purposes of the project and an assurance that the project design serves these purposes in the proportions believed sound. It may as well be said immediately that "planning" so described becomes a rather mixed pot of technical research, highest-level economic and social planning, politics, and engineering design. This accounts for some confusion over how to organize for the planning function in the water resources field. But, despite this confusion, planning—all of which precedes the turning of a spadeful of earth—can be distinguished from construction.

Construction could be conceived of as simply an engineering task of building to specifications provided by the planners. Perhaps it becomes immaterial where the construction responsibility lies organizationally, so long as the specifications provided by the planning group are accepted as controlling.

Operation of completed projects can be regarded as what happens after the con-

struction engineers have "delivered" the completed project. Under present conceptions of the relations among projects on the same drainage system, it can be argued that a single operating agency must control all dams on a particular drainage system, for the release of water upstream affects the flow of water into reservoirs downstream. The nature of this operating agency will be affected by the fact that operation is not merely mechanical, routine task, but involves a nice balancing of the competing claims of the multiple purposes for which the dam or system of dams was built. The volume and timing of water flow that is ideal for hydroelectric power production may not be ideal for navigation, flood control, irrigation, or other purposes. A single water master is needed, and his role will be more than a merely technical one. Yet, this is no argument for unification of land and water operations. As Charles McKinley has persuasively indicated, what needs to be treated as a unity for planning purposes need not be treated as a unity for operating purposes.¹⁶

The main point to be made is that planning-construction-operation can be thought of as a chain with weak links. So regarded, the argument that all three stages of water-related activities must be organizationally united loses its *prima facie* validity. Instead, a wholly new way of looking at the organizational problem has been developed.

The third principal way of defining the problem is to see it as really a congressional problem. A recurrent theme in much of the official and professional literature of water resources administration is that the policies of Congress, as set forth in statutes, are inconsistent; that Congress has so organized its committee structure as to abet organizational confusion in the executive branch of the government; and that Congress encourages the project-by-project approach at the expense of comprehensive basin-wide or nation-wide programming. It is doubtful that any responsible student of the subject would care to question the factual accuracy of this theme, which a congressional subcommittee has put in these terms:¹⁷

Your subcommittee is convinced that, for the maximum economic return from Federal water resource developments, a single integrated plan must be developed and provided for each stream. It is of the opinion that the processing of unintegrated segments through different committees and the ultimate enactment of conflicting projects can lead only to waste and a chaotic situation. It believes that no segment of a plan should be approved by any committee or enacted by Congress so long as major conflicts exist between such segment and the parts properly under jurisdiction of some other element of the executive branch. The insistence of Congress upon coordination through its refusal to authorize conflicting elements would probably bring about the necessary coordination more quickly than any amount of reorganization. The agencies of the executive branch must be shown that they cannot attain their conflicting ends by playing one committee of Congress against another.

On the question of organization, then, the subcommittee is of the opinion that present

¹⁶ McKinley, *The Valley Authority and Its Alternatives*, 44 AM. POL. SCI. REV. 618 (1950).

¹⁷ Subcommittee to Study Civil Works of the House Committee on Public Works, *The Civil Functions Program of the Corps of Engineers, United States Army*, 82d Cong., 2d Sess. 38, 39 (1952).

problems would not be solved in any marked degree by simple reorganization or by the establishment of a special board of review.

No serious student would fail to support efforts by Congress to improve its own relation to water resources problems. But what is in doubt is whether, absent remedial congressional action, one can or should attempt nothing to improve administrative organization.

To be sure, separate administrative agencies are allied with separate congressional committees, separate interest groups, and separate policies. But to think of these agencies as wholly passive elements in this pattern may be naïve; indeed, the subcommittee itself recognizes this.¹⁸ If, of the four elements in alliance, the executive agencies are the element most readily altered, then there is a probability that significant organizational changes among the agencies would break up the prior alliances, induce a reforming of congressional committee structure, and sharpen awareness of policy inconsistencies.

II

OFFICIAL PROPOSALS, 1949-53

Review of the official recommendations that have streamed from the Government Printing Office presses in the last decade is the most efficient way of perceiving the alternative organizational solutions that have appealed to thoughtful men who are not insensitive to the tension between the "one best way" (though they differ on what it is) and the political limits of tolerance. A convenient watershed for such a review is the inauguration of President Eisenhower in January 1953. In the Truman period, water resources organization was examined by the first Hoover Commission, the President's Water Resources Policy Commission, and the Missouri Basin Survey Commission, reporting, respectively, in 1949, 1950, and early 1953. In the Eisenhower period, there have been the Temple University Survey, the second Hoover Commission, and the Presidential Advisory Committee on Water Resources Policy. The first reported in 1953 and the last two in 1955.

The first Commission on Organization of the Executive Branch of the Government, chaired by former President Hoover, proposed that the Department of the Interior have a clear mission of "development of subsoil and water resources" and, arguing from the fact that such development required large public works, con-

¹⁸ The subcommittee added its opinion that "if Congress were to establish clearly four elements of policy, much of the apparent need for reorganization and for establishment of a review board would cease to exist. These four elements are (1) phases in water-resource development for which the Federal Government should assume some responsibility and some measure of the degree of that responsibility, (2) the place of local and State interests in the Federal development of water resources, (3) uniform standards for use by the executive branch for the measurement of the economic justification of water resource development projects, and (4) uniform standards for the allocation of costs in multiple-purpose projects and uniform criteria for the establishment of rates for the sale of products to recover such costs." *Id.* at 39.

Admirable as it would be to have these policy elements clarified, it seems most doubtful that such clarification would make the need for reorganization vanish.

cluded that the Department should manage other public works as well.¹⁹ This would bring together, in a Water Development and Use Service in the Interior Department, the rivers and harbors and the flood-control functions hitherto performed by the Army Corps of Engineers alongside the reclamation and power activities already in the Department.²⁰ The other principal "Services" in the Department would concern themselves with Building Construction, Mineral Resources, and Recreation.²¹ The land-management work of the Department would be transferred to the Department of Agriculture; certain other transfers would remove units incompatible with the new concept of the Department.²² The Commission recognized that the Department of Agriculture would have an interest in the selection of irrigation projects, that the Department of State would appropriately handle international negotiations, and that the Federal Power Commission would continue to have concerns tangential to the water development and use functions of the Interior Department.²³ These interdepartmental concerns are hardly the reason, though, for the Commission's recommending that there be in the President's office a Board of Impartial Analysis for Engineering and Architectural Projects, composed of "five members of outstanding abilities in this field." The Board would "review and report to the President and the Congress on the public and economic value of project proposals by the Department" and "periodically review authorized projects and advise as to progress or discontinuance."²⁴ Finally, the Commission proposed that each major drainage area have a Drainage Area Advisory Commission consisting of representatives of the Department of the Interior, the Department of Agriculture, and each state.²⁵

This sets the stage well for much that was to emerge from the deliberations of subsequent official study commissions. Note the several elements here displayed. First, the Commission proposed to bring the civil work of the Corps of Engineers into the Interior Department, thus simultaneously bringing to a focus, within a single department, both the principal water or river activities of the Government and the principal dam-construction work of the Government. These are related, of course, but it is of some organizational significance to clarify which is the conceptual basis for thus joining what history and politics have thrust asunder. Second, it proposed to bring other major construction work into the Interior Department—particularly public buildings construction—on the excuse that as long as engineers for construction of dams and irrigation systems were being gathered together in the

¹⁹ U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, REORGANIZATION OF THE DEPARTMENT OF THE INTERIOR I (1949).

²⁰ Sen. John C. McClellan and Rep. Carter Manasco, members of the Commission, dissented and filed a spirited defense of the Corps of Engineers. *Id.* at 81-89.

²¹ *Id.* at 15 *et seq.*

²² *Id.* at 7 *et seq.*

²³ *Id.* at 38. On the Federal Power Commission, the report was not entirely clear, but proposed "a study as to separation of certain general survey activities from the Federal Power Commission and their inclusion in this Department." *Id.* at 15.

²⁴ *Id.* at 2-4.

²⁵ *Id.* at 38.

Department, the Government's engineers working on dry land might as well come along too.

Third, the Commission proposed a board of review at the presidential level. The most clear-cut rationale for the recommendation was that "there is no adequate check in the Government upon the validity or timing of development projects and their relation to the economy of the country."²⁶ Elsewhere, one of the jobs of the Board is described as that of assuring that the Department of Agriculture gets a chance to examine Interior Department proposals for irrigation and reclamation projects.²⁷ These are distinct, even if not inconsistent, concepts of the Board's role, and it is useful to keep them clear. The Board was proposed even though, as a result of interdepartmental transfers of functions, most project proposals would be initiated by the Interior Department; a question left unanswered is why the Interior Department should not be expected to do the assessment job instead of having to pass the projects on up for a second going over at the President's level. It is quite a different thing to work from the assumption of scattered and competing points in the federal bureaucracy for initiation of project proposals, with no hierarchical superior to these initiating points save the President. On that assumption (characteristic of some of the later survey commissions), a case can be made for a review board to do much of the President's project-review work for him. A further feature of the Commission's proposed Board of Review needs to be noted. The Board members were not to be representatives of the several concerned federal departments, but rather, if the Commission's Task Force on Public Works were to have its way, of "the seagreen incorruptibles of the engineering profession."²⁸

Fourth, the Commission recognized the drainage basin concept of water development and the desirability of in-the-basin organization for collaboration among interested agencies and governments. Indeed, one of the more interesting passages in the report is one reading, "A further reason for unified organization of water development agencies [in the Department at Washington] is to permit the determination of policies upon a watershed basis."²⁹ The Commission quotes with approval the advocacy by its Task Force on Natural Resources of "regional decentralization of the Water Development Service . . . by river basins where practicable, to facilitate 'grass roots' decisions, interservice cooperation, and local participation in planning. . . ."³⁰ But then, in recommending a series of Drainage Area Advisory Commissions, the Hoover Commission makes clear that their purpose "should be coordinating and advisory, not administrative."³¹

These four ideas—the consolidation of water resources activities in one department (which would also have mineral resources, but not public lands), the consolidation of construction engineering in one department, the review of water resources project proposals at the presidential level by a special board, and the drainage basin as a unit

²⁶ *Id.* at 2.

²⁷ *Id.* at 6.

²⁸ *Id.* at 37.

²⁹ *Id.* at 39.

³⁰ *Id.* at 36.

³¹ *Id.* at 38.

for planning, cooperation, and advice (if not for administration)—are the pegs for much of the subsequent thinking about water resources administration.

What is missing from this agenda is the idea that found expression in the dissenting report of a distinguished minority of the first Hoover Commission. Commissioners Dean Acheson, James K. Pollock (a leading political scientist), and James Rowe (a former Assistant to the President) recommended establishment of a Department of Natural Resources. In their eloquent statement, the three dissenters argue from a conviction that "the conservation, development, and use of [all] our public resources is a single indivisible problem," and that forests, water, public lands, minerals, wildlife, fisheries, recreation, and power are but parts of that single problem. The Department they propose would include approximately the same functions as those favored by the Commission majority for the Department of the Interior, with two principal differences: (1) a Forest and Range Service would be created to include the Forest Service and forest insects and disease research (by transfer from the Department of Agriculture), and the Interior Department's Bureau of Land Management (which the majority had proposed to shift to Agriculture); and (2) public building construction work would not be brought into the Department. The dissenters concur substantially with the majority on the need for a Board of Review in the President's office and go beyond the majority in welcoming the regional authority device for "some river basins."³²

Some of the points made in the minority report require examination, for they add to the dimensions in which we may think about the organizational problem. It is already clear that two key propositions of the minority are, first, that land-and-water (and minerals) is the problem, and second, that government should be administratively organized to give strength to "major purposes." Both propositions lead to the proposal of a Department that encompasses all natural resources and emphasizes resources *development* in the public interest as the major departmental purpose. The second proposition explains why the minority prefer that construction unrelated to resources development be left to other departments having other major purposes. A curiosity in the minority's logic, however, is that they wind up not really meaning what they certainly appear to say. What they do mean is that *public* lands should be under the aegis of the department that has water resource development functions. Private lands, they grant, belong with the Department of Agriculture, which might well "focus its responsibility on harmonizing the producer interest in private lands with the need for conservation of . . . soil resources."³³ So, oddly, what we have is a division of jurisdiction in terms of public and private ownership of land—not in terms of the unity of land and water. Furthermore, because almost all of the public lands are located west of the one hundredth meridian, the minority are implying unity of western land and water, but disunity of eastern land and water—a point that was never made explicit.

The President's Water Resources Policy Commission, chaired by Morris L. Cooke,

³² *Id.* at 54, 68.

³³ *Id.* at 79.

reported in December 1950. Although requested by President Truman to steer clear of questions of administrative organization and focus on policy matters, the Commission could not escape the interrelations of policy and administration. It allied itself with the Acheson-Rowe-Pollock minority of the Hoover Commission, in favor of a Department of Natural Resources, with a decentralized Water Development Service through which basin development programs would be planned and managed.³⁴ But as the Hoover Commission's reports had been before the President and Congress for a year and a half without action being taken to unify water resources activities, the Cooke Commission considered what might be done in absence of such action. It chose to advocate congressional approval of interagency drainage basin commissions, each to include equal representation from all federal agencies with functions included in water resources programs, and each to be presided over by an independent chairman appointed by and responsible to the President. A Federal Board of Review would be created in the executive branch and be composed of members "with a broad understanding of the economic and social as well as the technical aspects of regional development."³⁵ The Commission recognized, as an alternative to the basin commissions, the creation of regional or valley administrations to manage the water and related land resources of the several basins.

More than most investigating groups, the Cooke Commission derived its organizational conclusions from immersion in the substantive problems of water resources and from an analysis of how the planning and development processes should be designed. It was not the first or the last group to find that gross inconsistencies in congressional policies and standards applicable to different types of projects and agencies were at the root of much of the difficulty. This being the case, mere organizational shufflings are not likely to be effective remedies. And yet, using existing organizational units as building blocks, it may be possible to introduce combinations and juxtapositions that will introduce more order than that of a jumbled pile. And it may be possible to design processes by which questions will be posed to Congress for decision that preclude Congress' escaping the responsibility for effecting reconciliation of its own several policies.

The heart of the matter, as the Cooke Commission saw it, was a basin program of a comprehensive, multiple-purpose type that would be related to the prospective economic and social development of the region, as a factor in the growth of the nation. The tool for destroying separatistic approaches by the several national agencies was to be appropriations. "At each step in the planning, authorization, and appropriation process," the Commission said,³⁶

... the basin program should be treated as a single program for all purposes rather than as an aggregate of plans for separate purposes to be individually approved. This procedure should replace the diverse authorization process now followed by the Federal agencies.

³⁴ I. PRESIDENT'S WATER RESOURCES POLICY COMM'N, REPORT 49 (1950).

³⁵ *Ibid.*

³⁶ I. *id.* at 52.

Appropriations should therefore be made to the basin programs as a whole, on the basis of budgets showing the approximate amounts to be allocated to the specific projects and participating agencies, rather than to specific functions.

All projects and programs recommended by the basin commissions would be analyzed and reviewed by the proposed Board of Review with an eye to economic feasibility, the broad national interest, and possible modifications in the public interest.³⁷

Were the procedures to be adopted along with the Commission's organizational proposals, a substantial shift in administrative power would be probable. The projection of the President into the basin commission, through the independent chairman, together with the principle of equal representation of all agencies with functions included in water resources programs, might lead to more fully integrated basin programs than emerge from, say, interagency committees chaired by the Corps of Engineers and operating on the absolute veto principle. The independent chairman and the minor-interest representatives (from the Forest Service, National Park Service, Fish and Wildlife Service, and Public Health Service, among others) might be expected to reject such self-serving propositions as the primary combatants—the Corps of Engineers and Bureau of Reclamation³⁸—might advance. The fact that agencies would be able to approach Congress for planning and survey money, for authorization of projects, and for appropriations for projects only through each basin commission would reduce the mutual re-enforcement of fragmentation currently typical of relations between agencies and congressional committees. The system would probably occasion a recasting of the congressional committee system in the water resources field, though the Cooke Commission was careful to avoid saying so.

The recommended Board of Review, although it appears patterned after the Hoover Commission proposal, has, in fact, a rather different role. It would review basin programs primarily to assure their compatibility with the larger concerns of the nation, which necessarily includes a consideration of the relations among programs of the several basins. In other words, its role would be less that of achieving coordination among the national agencies concerned with water resources than that of seeing to it that regionally-oriented basin commissions did not let their local enthusiasms blind them to the larger national interest in defense, maintenance of a national and world market, and balanced development of the national economy.

Early in 1952, President Truman established the Missouri Basin Survey Commission, under James E. Lawrence's chairmanship, to "study the land and water resources of the Missouri River Basin and . . . related matters . . . and . . . prepare recommendations with respect to an integrated and comprehensive program of development, use, and protection of said resources."³⁹ Just before the expiration of President Truman's term in January 1953, the Commission submitted its report, *Missouri: Land and Water*. The eleven-member Survey Commission, with three members

³⁷ *Id.* at 53.

³⁸ The Soil Conservation Service seems too newly active to be a "primary combatant," but too ambitiously involved in watershed projects to loom as merely a minor interest.

³⁹ Quoted in *MISSOURI BASIN SURVEY COMMISSION, MISSOURI: LAND AND WATER* 25 (1953).

dissenting, proposed that Congress establish a Missouri Basin Commission of five full-time members, to be appointed by the President with the consent of the Senate, from residents of the basin, belonging to both political parties.⁴⁰ There are ambiguities in the statement of the Commission's purposes and powers, but the terms used are as follows. The general purpose is:⁴¹

... to prepare and direct the development of a land and water resource program for the Missouri Basin. It will be the Commission's task to harmonize and reconcile the inter-related features and purposes of such a program *by directing and coordinating the activities of all Federal agencies relating to resource development.* [italics added]

The proposed Commission would review all uncompleted investigations, plans, programs, and projects of each federal agency, even if they were approved or authorized by Congress prior to establishment of the Commission; and all future investigations, examinations, and surveys would be directed by the Commission, which sometimes would direct agencies to conduct joint studies of these types. Requests from agencies for authorization of completed project plans would have to be submitted to the Commission for analysis of engineering and economic feasibility and relation to the basin programs; and the request, accompanied by the Commission's report and recommendations, would then go to Congress "through the established channels of review in the Executive Office of the President."⁴² The Federal Power Commission would be unable to issue any permit or license if the Missouri Basin Commission, to which the application would have to be referred, held it inconsistent with the basin program.

Annually, the Commission would prepare "a consolidated Basin Resource Budget for land and water resource development, in consultation with the operating agencies," including budgets for basic data, planning, construction, and operation, and indicating three alternate levels of expenditure "for the guidance of Congress in appropriating funds for resource development."⁴³

The difficulty in defining the role of the Commission lay in the fact that, in contrast to the situation of the Tennessee Valley in 1933, the Missouri Valley is already in process of resources development through construction programs of federal agencies. Rejecting the "authority" idea, the Lawrence Commission sought to devise "a basin agency responsible for directing and coordinating the special skills and competences of the existing Federal agencies in a unified program of resource development"—that is, "an organization which would not replace the Federal agencies, but would direct and coordinate their activities."⁴⁴ Yet, a line is attempted between the construction activities, which are left to individual agencies (under the Commission's guidance), and the operation of the completed structures. In the latter phase, the Commission "is given the responsibility for integrated operation of the main stem

⁴⁰ *Id.* at 264. The Commission split on exactly how the states should be related to the new organization. The majority proposed an advisory committee of governors.

⁴¹ *Id.* at 8. See also *id.* at 265.

⁴² *Id.* at 265.

⁴³ *Ibid.*

⁴⁴ *Id.* at 9, 11.

and tributary reservoirs for water control and power generation and dispatching."⁴⁵

Missouri: Land and Water contains a perceptive and enlightening review of the organization problem as it existed in the basin at the time. Specific experiences are described, and the existing coordination devices are carefully appraised.⁴⁶ But, save as the inadequacy of existing arrangements is sufficient proof that anything else will be better, the rationale for the Commission's proposed organization is nowhere clearly stated. It is difficult to visualize the Missouri Basin Commission, with its principal offices in the basin, coordinating, advising, guiding, directing, and establishing "operational goals and administrative policy"⁴⁷ for the field officials of the national functional agencies. As Hubert Marshall has pointed out, the role proposed for the new Commission⁴⁸

... would create a schizophrenic situation in which operating officials recruited by and responsible to bureau chiefs in Washington, would at the same time be working under the immediate supervision of the commission. ... [T]here is every reason to suppose that the operating bureaus, if allowed to remain in the basin, would not readily abdicate their control of policy and program to a new commission.

Yet, in its very failure to face such problems the Lawrence Commission serves for us the function of accenting the difficulty and, hopefully, forcing a clarification. How can an area-based agency be related to national function-based agencies?

III

OFFICIAL PROPOSALS, 1953-55

In late 1952, preparatory to the inauguration of Dwight D. Eisenhower as President, a study was undertaken "in order to bring the Hoover Report up to date and prepare guidelines for continued reorganization in the new Administration."⁴⁹ While not an official study in the usual sense, it was designed to facilitate the work of the incoming Administration, and, in fact, it fed directly into the President's Advisory Committee on Government Organization that was established under Nelson A. Rockefeller immediately after the inauguration.⁵⁰ This, the *Temple University Survey of Federal Reorganization*, proposed that the Interior Department have a Water Development Service that would include "the civil functions of the Army Corps of Engineers; the functions of the Bureau of Reclamation; all flood-control functions of the Department of Agriculture which consist of actual engineering as distinct from counseling in farming practices"; and certain other responsibilities.⁵¹ The Interior Department would also contain a Power Service comprised of the Bonneville, Southwestern, and Southeastern Power Administrations and certain planning authorities vested in the Federal Power Commission. A Minerals Service would complete the principal large blocks of the Interior Department's structure, but the

⁴⁵ *Id.* at 11-12.

⁴⁶ *Id.* at 213-46.

⁴⁷ *Id.* at 266.

⁴⁸ Hubert Marshall, *Organizing for River Basin Development*, 13 PUB. ADMIN. REV. 273 (1953).

⁴⁹ 1 TEMPLE UNIVERSITY, SURVEY OF FEDERAL REORGANIZATION preface (1953).

⁵⁰ Exec. Order No. 10432, 18 FED. REG. 617 (1953), 5 U.S.C. §1332 (Supp. III, 1956).

⁵¹ 2 TEMPLE UNIVERSITY, *op. cit. supra* note 491, at 34.

National Park Service and Fish and Wildlife Service would also continue. The Bureau of Land Management would be transferred to the Department of Agriculture. Finally, the planning of water resources development would be decentralized through establishment of "State-Federal inter-agency regional committees operating under the leadership of field representatives of the Division of Water Resources Programming."⁵²

Curiously, these recommendations do not flow naturally from the analysis the study group set on paper. The *non sequitur* is simply that from the premise that "all our natural resources are inextricably inter-related,"⁵³ the group concludes that the Interior Department should have water and mineral resources and parks, and the Department of Agriculture should have land resources, including public lands, soil, and forests. Note this statement of the problem of the Department of the Interior:⁵⁴

The main effort of this Department is addressed to the development and conservation of the nation's water, land and forest resources. Yet, for all its size, Interior presently encompasses a comparatively small portion of federal activities in these areas. And that, with respect to the Department of the Interior—and the nation—is the problem.

Or the following passages:⁵⁵

Careful study . . . shows that the leadership and impetus required to administer federal resources activities with due regard for their importance to the national welfare requires that a *single* Cabinet Department be devoted to the main purpose of wise conservation and development of the nation's resources. [*italics added*]

....

Reorganization of the federal natural resources functions should provide a means for achieving a proper balance among the various Federally-supported resources programs which, in the past, have been weighted heavily in favor of river development.

Yet, the burden of the recommendations made is that land resources should be in a different department from water resources! The explanation given for this, inconsistent, of course, with earlier expressions, is that the most important use of land (including the public domain) is the production of food and fiber crops, which is already the concern of the Department of Agriculture, as are also forestry, soil conservation, and grazing.⁵⁶

The recommendation for absorption of the civil functions of the Army Corps of Engineers by the Interior Department rests on familiar grounds: that "there cannot logically be two plans for one river," and that "every effort at voluntary cooperation has failed."⁵⁷ Which way the consolidation tide should run seems clear, for logic cannot support the conduct of large-scale operations of a purely civilian nature by any branch of the Armed Services.

The Temple University study, however, was the last official study to recommend a transfer of the civil functions of the Army Corps of Engineers. From 1953 on, the

⁵² 2 *id.* at 35.

⁵³ 2 *id.* at 31.

⁵⁴ 2 *id.* at 29.

⁵⁵ 2 *id.* at 30.

⁵⁶ 2 *id.* at 36.

⁵⁷ 2 *id.* at 35.

Corps was to be treated as an immovable object against which no irresistible force could be effectively mobilized. Politics makes strange river-bedfellows.

The second Hoover Commission, reporting in 1955, had given particular attention to problems of water resources and power. According to Commissioner Chet Holifield, \$430,000 was spent on the Commission's inquiry into these problems;⁵⁸ this was almost a sixth of total Commission expenditures. Eschewing the first Hoover Commission's strong advocacy of a shift to the Interior Department of the civil functions of the Corps of Engineers, the second Commission simply recommended (a) strengthening of the Bureau of the Budget's staff to "enable it to fully perform the function of evaluation of the merits of water development projects presented to it for appropriations,"⁵⁹ and (b) creation of a Water Resources Board in the Executive Office of the President. This Board would include some Cabinet members, five public members, and "a non-Government chairman." The Board's public members were to be chosen from "engineers, economists, and others of recognized abilities." The Board would have two functions: (a) "to determine the broad policies for recommendation to the President, and, with his approval, to the Congress," and (b) "to devise methods of coordination of plans and actions of the agencies both at the Washington level and in the field."⁶⁰

This, it would appear, is an abdication of the Commission's responsibility to find an answer to the administrative evils it describes. A content analysis of the Commission's report would reveal its awareness of these evils: "overlaps and conflicts between Federal agencies"; "when the control of reservoirs in the same river is under different agencies with different responsibilities and motivations there is inevitable conflict in point of view"; "the diffusion of authority among the agencies on water development, and the need for clarification and coordination";⁶¹ "flood control is not an isolated administrative segment of our water development. It involves great problems of coordination between Federal agencies engaged in water development."⁶²

The Commission's report does devote attention to river basin coordination, although this yielded no formal Commission recommendation. "With some exceptions," the report reads, "the critical place for coordination of water development projects is at the river-basin level." It then harks back to a 1926 speech by then Secretary of Commerce Hoover proposing that each river basin have a commission to coordinate development and to consist of representatives of each state and major federal agency concerned, and of "the private development agencies."⁶³ After tracing this idea through the reports of intervening study commissions and legislation, the Hoover Commission declares that the proposed Federal Water Resources Board "would set up such basin commissions to represent fairly the Federal, State, and private interests." They would not be administrative bodies, nor would they neces-

⁵⁸ 2 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, REPORT 10 (1955).

⁵⁹ 1 *id.* at 39.

⁶¹ 1 *id.* at 11-13.

⁶² 1 *id.* at 30.

⁶⁰ 1 *id.* at 38.

⁶³ 1 *id.* at 66.

sarily include all streams in a particular drainage area; further, "they should be varied in scope and purpose with changing economic, social, or political conditions" (a welcome thought thirty years after the Secretary of Commerce set forth the model). In distinctive prose, the Commission states, "Their function would be limited to plans, coordination of projects in each particular basin, and to coordinate between basins where such interests overlap."⁶⁴

This proposal for basin commissions, vague as it is, must somehow be reconciled with the clear-cut recommendation for incorporation, as public enterprises, of the Columbia River basin system, the Hoover-Parker-Davis Dams Administration, the Central Valley Project of California, the Missouri River basin project, the Southwestern Power Administration, and the Southeastern Power Administration.⁶⁵ This is coupled with recommendation that these to-be-corporations and the Tennessee Valley Authority be required to secure their capital for future improvements, when authorized by Congress, by issuing their own securities to the public. The purpose of the two recommendations together is "to release the Federal Government of further call upon the taxpayers to finance the seven major Federal power organizations."⁶⁶ A plausible reconciliation would be that the basin-commission proposal is pointed toward the planning of projects and the incorporation proposal toward the operation of power production and sale from the constructed projects. But this fails to square with the expectation that the incorporated enterprises would be proposing "future improvements" to Congress.

The treatment of the civil functions of the Corps of Engineers is one of the more curious aspects of the Hoover Commission's report. It is worth examining, for it marks abandonment of the consolidation emphasis of previous reports. The Commission cites chapter and verse of errors in cost estimates by the Bureau of Reclamation, Tennessee Valley Authority, Soil Conservation Service, and Corps of Engineers.⁶⁷ This exposure of the agencies' miscalculations is followed by a handsome disclaimer:⁶⁸

The defects cited here are not intended to cast doubt upon the competence of the Federal agencies concerned with water development. Their integrity and the engineering qualifications of their personnel are not in question. Federal agencies have an enviable record for safe engineering design, and for successfully carrying out large engineering projects. They have been signally free of the taint of dishonesty in administering construction programs. Most of the blame must be placed on the lack of consistent national policies, and the absence of adequate provisions for review, inspection, and coordination of projects at Washington and basin levels.

Oddly enough, virtually this whole statement is repeated with specific respect to the Corps of Engineers when the Commission is dealing gingerly with flood-control

⁶⁴ 1 *id.* at 31.

⁶⁵ 1 *id.* at 121.

⁶⁶ 1 *id.* at 120.

⁶⁷ 1 *id.* at 20-25. But see Commissioner Holifield's criticism, in his dissent to the Commission's report. 2 *id.* at 10, 46-51.

⁶⁸ 1 *id.* at 25.

activities. Lest there be any doubt, the Commission adds, "The Commission wishes no sentence in the report to be construed as a reflection upon the Corps."⁶⁹ In "dead-pan" fashion, the Commission describes the organization of the Corps, noting without further comment that in late 1954, the Corps had 116 Army Engineers and 25,445 civilians assigned to the civil works program. The Commission thus refuses to draw the obvious conclusions from this ratio that were drawn both by the first Hoover Commission and by Albert L. Sturm in his impressive study of the Corps's case for retention of civil works activities—a study prepared for the second Hoover Commission's own task force.⁷⁰

Proceeding to consider critically the Soil Conservation Service's headwater dam construction program, which "has raised many questions of conflict and overlap with the Corps of Engineers," the Commission formally recommends "that the construction of headwater dams in the flood control program of the Soil Conservation Service be transferred to the Corps of Engineers." This recommendation is arrived at "in view of the engineering competence of the Corps of Engineers and because its staff is operating in all streams of the country, and because another large engineering organization is undesirable in the Federal Government."⁷¹ So the net result of the Commission's consideration of the civil works role of the Corps is a recommendation for its enhancement.

We turn finally to the December 1955 report by the Presidential Advisory Committee on Water Resources Policy.⁷² The Committee consisted of Secretary of the Interior Douglas McKay (Chairman), Secretary of Agriculture Ezra Taft Benson, and Secretary of Defense Charles E. Wilson. The President established the Committee on May 26, 1954, well aware that he already had the Bureau of the Budget, the President's Advisory Committee on Government Organization, and the second Hoover Commission available as potential alternative sources of at least organizational advice in the water resources field. However, he chose to set up the Cabinet Committee, with the Bureau and the Advisory Committee in cooperating roles, and with the relation to the Hoover Commission defined as one of the Committee's being prepared to assist in executive branch consideration and review of the Hoover Commission's recommendations, when submitted. As the Hoover Commission's report on water resources and power was submitted to Congress in June 1955, the Cabinet Committee had it and its related three-volume, 1800-page task force report to draw on for information, points of view, and specific proposals. In the event, however, the Cabinet made no mention of any of its sources, and the degree of its

⁶⁹ 1 *id.* at 67.

⁷⁰ Albert L. Sturm, *Civil Functions of the Corps of Engineers—Relation to Military Mission*, 3 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, TASK FORCE REPORT ON WATER RESOURCES AND POWER 1473-1578 (1955). For the Task Force's own conclusions, see 1 *id.* at 190 *et seq.*

⁷¹ 1 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 58, at 70-71.

⁷² PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, WATER RESOURCES POLICY (1955).

acceptance and rejection of Hoover Commission recommendations is, therefore, left for determination by those patient enough to compare the two reports.

The McKay Committee proposes four organizational creations: a Coordinator of Water Resources, a Board of Review for Water Resources Projects, a Federal Inter-agency Committee on Water Resources, and, at the regional or basin level, a series of water resources committees.

The Coordinator of Water Resources, located in the Executive Office of the President, would "provide Presidential direction to agency coordination and . . . establish principles, standards, and procedures for planning and development of water resources projects."⁷³ He would be permanent chairman of the Federal Interagency Committee on Water Resources, would cooperate with the Bureau of the Budget and the Council of Economic Advisors in evaluating departmental requests for appropriations, work with the Coordinator of Public Works Planning in relation to water resources developments, and assist in reconciling water resources policy with other federal policies.⁷⁴ However, he would not assume the budgetary, fiscal policy review, or legislative clearance functions of the Bureau of the Budget.

The Board of Review for Water Resources Projects would also be in the Executive Office of the President. It would consist of three individuals, serving full-time, appointed by the President for terms corresponding to his own and serving at his pleasure, and, in now familiar terms, "should be chosen from qualified engineers, economists, or others of recognized abilities and judgment in the resources field."⁷⁵ Although the reason for proposing creation of the Board is that "the President, before making final decision on water resources projects, should have the benefit of advice" of such a board, in operation, the Board would "report to the President through the Coordinator of Water Resources" and, in fact, address its recommendations, for the most part, to the Coordinator directly. The Board would have its own chairman, and the Coordinator would not be a member.⁷⁶ Its terms of reference are variously phrased. It is "to analyze the engineering and economic feasibility of projects,"⁷⁷ to "evaluate, in the light of policy established by the Congress and criteria established by the Coordinator of Water Resources, all reports on water resources projects . . .," to recommend any modifications "considered desirable from a comprehensive national viewpoint," and to recommend changes it deems advisable in the criteria for water resources projects.⁷⁸

The Interagency Committee on Water Resources would be permanent, advisory in role, and chaired by the Coordinator already described. Its members would be the head or an assistant-secretary-rank official of the Departments of Agriculture, Army, Commerce, Health Education and Welfare, and Interior, and the Federal Power Commission. Advisory to the President, the Committee would be "the medium for coordination of the interrelated functions of the several agencies" and would "have authority by unanimous action to determine finally interagency relation-

⁷³ *Id.* at xi.

⁷⁴ *Id.* at 19.

⁷⁵ *Id.* at xi.

⁷⁶ *Id.* at 18.

⁷⁷ *Ibid.*

⁷⁸ *Id.* at 19.

ships." It would be "the channel for advice between the President and Federal representatives on the water resources committees"—to which we now turn.⁷⁹

Each water resources committee at the regional or basin level would have a permanent, nonvoting chairman appointed by the President and would consist of one representative from each federal department having water resources responsibilities and one representative from each affected state, to be appointed by the governor. All members would be equal, but "the total number of either Federal or State representatives is regarded as immaterial, since the conflicts should be resolved by cooperation and not by voting strength."⁸⁰ However, unresolved disagreements would be referred to the Coordinator of Water Resources. Each committee chairman would be responsible to the Coordinator and would have "a small independent staff and funds for independent use."⁸¹

An inconspicuous footnote in the Cabinet Committee's report suggests that consideration might be given to broadening the scope of these committees to include all natural resources. Even under the name of "water resources committees," each is to prepare "a comprehensive plan which will best serve the region and the Nation in the development of water and related land resources."⁸² The committee would recommend an annual work schedule to be reflected in the budget requests of each cooperating agency and would report annually on progress.

A careful reading of the Cabinet Committee's description of these water resources committees leaves an impression of care to maintain the separate responsibility and vigor of the several national agencies with water resource interests. Every sentence in the following brief paragraph contributes to the full flavor:⁸³

The water resources committees should be the principal and continuing medium through which the various departments, State and Federal, coordinate resources planning and development activities. The committees should serve as the mechanism through which the several agencies would prepare and publish joint plans for water resources development. Action on specific projects of joint plans, however, would be taken by the appropriate agency or agencies. The committee may foster studies of water resource problems not otherwise sponsored by any agency.

The concise report (a mere thirty-five pages) of the Cabinet Committee makes selection and summary almost impossible. Yet, the report itself is such a discriminating distillation of much of the thinking that has taken place about water resources administration that some characterization of the reasoning behind the recommendations must be attempted. The facts that the word "power" does not appear until page fourteen, and that one looks in vain for a mention of power development in the list of six objectives of "a sound water policy"⁸⁴ need not deter one from seeking the report's wisdom on other matters. What may be thought of as the summary findings or conclusions of the Committee include two points of importance for administration.

⁷⁹ *Id.* at 18.

⁸¹ *Id.* at 18.

⁸² *Ibid.*

⁸³ *Id.* at xi, 1. For a somewhat different list, also omitting power, see *id.* at 13.

⁸⁰ *Id.* at 17.

⁸² *Id.* at 17.

"The greatest single weakness in the Federal Government's activities in the field of water resources development," says the Committee, "is the lack of cooperation and coordination of the Federal agencies with each other and with the States and local interests."⁸⁵ Largely to blame for this is the fact of "different laws empowering different agencies to pursue particular programs for different purposes."⁸⁶ Second, the Committee believes that although planning the coordinated development of water resources *by river basins* is generally sound, it can be unduly emphasized, and the appropriate planning area, in some instances, may be the region, rather than the basin.⁸⁷

Elsewhere, the Committee provides further foundation stones for the construction of effective water resources planning and development. Note the scope of the statement, "The objective of planning should be the best utilization of all water resources from the time precipitation falls upon the land until the water again finds its way into the sea,"⁸⁸—clearly a far cry from emphasis on water simply in the channel. A subtle point, of some administrative moment, is made in the recognition that most of the planning to date has been with respect to flood control, navigation, irrigation, soil conservation, watershed control, and hydroelectric power, at the expense of due concern for drainage, fish and wildlife preservation, recreation, scenic values, pollution control, and water supplies.⁸⁹

The Committee finds that mere circulation for comment among interested agencies of the plans prepared by one agency is no answer to the need for coordination. A plan so prepared is "frequently lacking in the over-all viewpoint that should be controlling,"⁹⁰ and other agencies do not sufficiently contribute the missing viewpoint in their rather hurried efforts to consider the proposal. Nor would consolidation of "all Federal agencies engaged in natural resources development, including water . . . into a single Federal agency" be an effective solution, even apart from the question whether it would be adopted by Congress without a long delay.⁹¹ The problem is inconsistencies in policies, and a single agency responsible for all water resources development could not effectively operate until that problem was resolved.

The Committee's administrative proposals depend heavily upon the rigor with which its procedural views could be implemented. No agency would initiate an investigation of a major project without specific approval of Congress. No agency would have authority to proceed with any major project or program unless Congress had authorized it "by specific act of Congress for each such project." No agency would seek such authorization until its proposal had been reviewed for a reasonable time by the various federal departments, the Board of Review, the states, and local interests directly affected, nor until it had been cleared by the Coordinator of Water Resources. No agency would seek appropriations for an authorized project without re-examining the economics and engineering in a report that would be submitted

⁸⁵ *Id.* at 2.

⁸⁷ *Id.* at 3 *et seq.*

⁸⁹ *Id.* at 13 *et seq.*

⁹¹ *Ibid.*

⁸⁶ *Ibid.*

⁸⁸ *Id.* at 13.

⁹⁰ *Id.* at 14.

through the Bureau of the Budget to the Appropriations Committees: if significant economic or engineering changes had been made since the date of authorization, a report would have to be submitted to the Board of Review and then to the appropriate legislative (*i.e.*, nonappropriations) committees of Congress for approval or modification of the project. If five years should elapse after a project had been authorized, with no funds appropriated for construction, the full review process would need to be fully repeated.⁹²

IV

CONCLUSION

The very fact that the choice of water resources projects is of political moment both complicates and simplifies our task. It complicates the task because a due respect for what is possible or impossible politically should lead one to modify his preferences for ideal administrative solutions. What Congress will accept then becomes the key question. If Congress will clarify its water resources policy, then administrative consolidation of water resources agencies becomes less necessary—such, at least, is one position. If Congress will interpose no objection to a presidential reorganization order that consolidates water resources agencies, then consolidation may be a tactical move directed toward eventually persuading Congress to reconcile its contradictory policies. If Congress will neither clarify its policies nor permit consolidation of agencies, then the immediately practical step is to strengthen coordination among water resources agencies in planning and in final processing of project proposals. These are all reasonable efforts to adapt administration to “the facts of life” on Capitol Hill.

Congress, however, will accept none of these solutions. It shows no disposition to clarify its policies, or, for that matter, to simplify its structure of committees concerned with water resources.⁹³ It is even distrustful of administration efforts to standardize the methods by which the several agencies estimate economic and engineering feasibility of projects, lest congressional freedom of choice be thereby con-

⁹² *Id.* at 28 *et seq.*

⁹³ One of the most recent examples of awkward committee arrangements is the Watershed Protection and Flood Prevention Act of 1954, as amended in 1956. The Secretary of Agriculture is authorized to assist a local organization in constructing “works of improvement” having a total capacity not exceeding 2500 acre-feet and involving a federal contribution of not over \$250,000. But “no appropriation shall be made for any plan” exceeding the acre-feet or dollar figures cited “unless such plan has been approved by resolutions adopted by the appropriate committees of the Senate and House of Representatives: *Provided*, That in the case of any plan involving no single structure providing more than 4000 acre-feet of total capacity the appropriate committees shall be the Committee on Agriculture and Forestry of the Senate and the Committee on Agriculture of the House of Representatives and in the case of any plan involving any single structure of more than 4000 acre-feet of total capacity the appropriate committees shall be the Committee on Public Works of the Senate and the Committee on Public Works of the House of Representatives, respectively.” 68 STAT. 666 (1954), as amended, 70 STAT. 1088, 16 U.S.C. §1002 (Supp. III, 1956). Undoubtedly, the introduction of the Committees on Public Works was designed not only to protect their jurisdictional claims, but to protect the Corps of Engineers against undue trespass on its claimed jurisdiction by the Department of Agriculture. See *Hearings before a Subcommittee of the Senate Committee on Public Works on H.R. 8750, Amending the Watershed Protection and Flood Prevention Act*, 84th Cong., 2d Sess. (1956).

stricted.⁹⁴ It is opposed to consolidation of water resources agencies, and no recent President has dared to send to Congress a reorganization plan for this purpose. It is opposed to the strengthening of coordinative and review machinery in the Executive Office of the President.⁹⁵

The retreat before congressional obduracy may halt with the discovery of the drainage basin committee formula for peace. Members of Congress are notably area-oriented and might find it easier to establish a kind of suzerainty over the committee for the basin from which they are elected⁹⁶ than to work out a rewarding relation to a nationally-integrated water resources program developed in the Executive Office of the President. But to date, no organizational formula has been evolved for drainage basin committees that will satisfy the area orientation of congressmen, the national orientation of the President, and the functional orientation of the several water resources agencies.

Earlier confidence in interagency committees at the national and basin levels has evaporated. The second Hoover Commission's task force on water resources and power spoke in wholly disenchanted terms about the interagency committee device. Typically, each agency has an absolute veto; each representative on a committee is subject to reversal by higher officials in his own agency; each agency avoids criticism of a fellow agency lest the compliment be returned; the chairmanship is either held by one of the agencies or it rotates among the agencies (and either method is bad); the committee staff work is either farmed out to the agencies or is performed by an *ad hoc* staff assembled by detailing of personnel from the agencies (and again, either method is bad); and there is "the massive defect" of "the absence of formal, external control, and the fact that . . . the agencies will be sitting in judgment on their own plans and actions."⁹⁷

⁹⁴ BUREAU OF THE BUDGET, CIR. NO. A-47, REPORTS AND BUDGET ESTIMATES RELATING TO FEDERAL PROGRAMS AND PROJECTS FOR CONSERVATION, DEVELOPMENT, OR USE OF WATER AND RELATED LAND RESOURCES (1952) and the proposed revision of Nov. 29, 1954, was attacked in S. RES. 281, 84th Cong., 2d Sess. (1956), and related hearings. *Joint Hearings of the Senate Committees on Interior and Insular Affairs and on Public Works on S. Res. 281, Conservation and Development of Water Resources*, 84th Cong., 2d Sess. *passim* (1956).

⁹⁵ Robert E. Merriam, Assistant to the Director of the Budget, testified to the impasse on implementation of recommendations of the Presidential Advisory Committee on Water Resources Policy: "Then, too, I must say, Mr. Chairman, in all candor, that we discovered ourselves in this position: that as far as organizational matters are concerned, which is where the President's Advisory Committee thought it ought to start in its analysis of legislative proposals, we are faced with a situation, in which the chairmen of the two pertinent committees of the Senate . . . have already indicated opposition to, as I understand it, at least 2 of the 3 specific organizational proposals that would require legislation, namely, that of a coordinator and a board of review." *Id.* at 64. Senator Murray earlier had commented on the President's Committee proposals: "It is manifest that the repetitive review which these processes would entail could succeed in bringing Federal participation in land and water-resources conservation and development to a complete standstill." *Id.* at 5.

⁹⁶ The proposal of a Missouri Basin Commission emerged from the Missouri Basin Survey Commission, in which six of the eleven commissioners were members of Congress. The persistent efforts of Sen. Kenneth McKellar, of Tennessee, to establish patronage rights over the Tennessee Valley Authority, even though successfully resisted, are suggestive of congressional expectations about "their" constituency areas.

⁹⁷ 1 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 70, at 74. See also 3 *id.* at 1395-1472, for the excellent article, Vawter, *Case Study of the Arkansas-White-Red River Basin Inter-Agency Committee*.

To be sure, there are ways of correcting many of these defects. But the corrections destroy the reasons for hope that Congress might accept basin committees, even if it will accept no other administrative solution. Any improvements in the interagency water resources committee must strengthen presidential control—through a chairman appointed by the President and affiliated with none of the represented agencies, through the independent chairman's possession of determinative power in cases of disagreement within the committee (or power to refer disputes to the President's office), through provision of a staff and budget for the chairman, and through the vesting of final power to formulate the basin program in the President's office so that merely additive agreements among agencies may not come to take the place of truly integrated programs. Once this much is conceded, it seems impossible for the Presidency to avoid adding a national viewpoint that may relate each basin committee's program to those coming from other basin committees and so introduce a comprehensive national policy approach that will inevitably modify the results of the basin-oriented work.

There seems no reason to expect that Congress would welcome such an arrangement, for the President would again be forcing Congress to think of water resources development as a national program rather than as a disparate assemblage of specific projects in the districts of the individual congressmen.

The indications that Congress cannot be appeased by any administrative arrangement so far devised simplifies our immediate task of drawing conclusions about national water resources administration. Until further political analyses disclose a way in which Congress might accommodate the patent need for more reasonable arrangements for consideration of water resources programs, we can revert to relatively apolitical modes of analysis. In doing so, we may reopen questions that have been closed for several years in deference to the limits of what seemed possible.

The bulk of the planning, construction, and operation of water resources programs and projects should be in a single major national department. The civil functions of the Army Corps of Engineers, the headwater dams work of the Soil Conservation Service, and the irrigation and reclamation work of the Bureau of Reclamation should be consolidated in this department. Included in the department—presumably a reconstituted Department of the Interior—might well be certain other resource bases of economic development, particularly such energy sources as coal, oil, and gas. Nonetheless, even if the department embraces minerals and public lands, it cannot be a truly comprehensive department of natural resources, and the exclusion of atomic energy stands in the way of its achieving a total view of energy resources.

The emphasis upon water and upon construction of dams has obscured the fact that these are means, not ends. It follows that the planning of water resources projects must be oriented to policy judgments about ends to which water and construction projects can contribute. Although water and physical structures are strategic levers, control of which carries substantial influence on human welfare, the uses to which the levers shall be put must not be left to determination by staffs of

construction engineers. Ultimately, the broad decisions must be made by Congress. But the decisions will be more rational if programs are formulated in the first instance in the executive branch.⁹⁸

Water resource program formulation should be primarily the task of the secretarial level of the contemplated department, and something comparable to the Interior Department's Program Staff of the pre-1953 period should aid the secretary in this responsibility.⁹⁹ Both the secretary and the program staff will do a better-rounded job if the department includes several resources (and even resource uses, such as recreation and commercial fishing), for the planning problem is not water, but the relation of water to other resources and to human needs, and the programmers need constantly to be reminded of this within their own department.

To build up the department secretary's role would proportionately relieve the pressure on the Presidency, and so reduce the tendency to multiply various coordinative and "objective" boards and committees in the Executive Office. The latter tendency has been prominent in recent official reports and suggests a too easy dumping of problems into the President's office.

A distinction needs to be drawn between water resources development and economic development. The latter, it has been suggested earlier, is a far broader concept and involves a much greater variety of elements than does water resources development. Administratively, this warrants recognition by different organizational levels. Responsibility for economic planning might be placed in the Executive Office of the President, while responsibility for water resources planning might rest with the secretary of the proposed department. This does not mean that water resources programs formulated in the department should not be reviewed in the President's office before transmittal to Congress. It does mean that the review should be broad in nature.

Decentralization of initial drafting of water resources programs to the drainage basin level should be easier to manage within a single department than would be an attempt to vest a presidential basin representative with authority to direct field agents of several national agencies. And it would certainly be more effective than would be loose-jointed cooperation through interdepartmental committees. Decentralization of initial preparation of economic development programs, on the other hand, might well follow regional, rather than basin, lines and might need to draw on a number of agencies through interdepartmental committees, temporary assemblage of joint staffs, and assignment of individual research projects. Our experience to date indicates that reports on regional economic development are likely to be informing and suggestive, but not to be firm plans or programs that will be formally adopted by the President or Congress. "Hard" planning of water resources programs and

⁹⁸ The ideal conception of the relation between formulation by the executive branch and decision by Congress calls for the formulation of, say, three alternative programs costing different amounts; thereby Congress would actually choose, instead of merely ratify.

⁹⁹ See Wengert and Honey, *Program Planning in the U.S. Department of the Interior, 1946-53*, 14 PUB. ADMIN. REV. 193 (1954).

"soft" planning of economic development are, therefore, likely to raise different administrative questions, or at least to raise the same questions with different intensities.

These reflections do not resolve the problems of administrative organization raised in the early pages of this paper. The neat categories of administrative logic are seldom exactly reproduced in the untidy world of administrative reality. But certain marginal gains may be anticipated from action along the simple lines suggested. The reconstituted Department of the Interior would be oriented nationally, instead of westerly. This is in part because absorption of the Corps of Engineers' civil functions would bring into this department the rivers and harbors-dredging and the flood-control activities of the East and South. It is in part, too, because a clearly-identified administrative center for water resources programming would predictably concern itself with the increasingly urgent water problems of heavily-populated and industrialized sections of the country. If the department were oriented in this fashion, certain other pieces of the puzzle would fall into place.

A nationally-oriented department, with a well-integrated objective whose accomplishment is substantially compatible with the public interest, may, with some luck, become a worthy possessor of responsibilities that otherwise would have to be retained in the President's office. That is, a department that is concerned solely with a particular section of the country, or a particular resource, or a particular use of a resource (*e.g.*, irrigation, power) is in the role of a biased advocate, and its proposals must be carefully evaluated at a higher level where a broader perspective prevails; but if these identifications of interest can be expanded, a broad perspective may be hoped for at the departmental level. This, it is true, will not follow unless the programming responsibility is kept at the secretary's level. If it is shifted to the bureau level, there may follow a segmentation of interests, a narrowed perspective on the public interest, a tendency to find satisfaction in energetic pursuit of limited objectives; the building of dams is more likely to become an end in itself, and engineers are more likely to be making policy judgments beyond their ken.

Within this framework, there would appear to be room for two other developments. One is the working out of the conflict between areal and functional bases of organization, which underlies much of the difficulty surrounding the idea of basin committees or basin staffs. The other is the encouragement of congressional attitudes that may lead to a programmatic approach to authorization and appropriation for water resources projects, a development of consistent policies, and a reconsideration of the present jurisdictional divisions among the Public Works, Agriculture, and Interior and Insular Affairs Committees. Both developments would be advanced by a redesigned Interior Department.

To go beyond this point of reflection and prediction one has need of "An eye that like a diver to the depth / Of dark perplexity can pass and see, / Undizzied,

unconfused."¹⁰⁰ He who possesses such an eye might cast his gaze on the political obstacles to improvement of water resources administration.¹⁰¹

¹⁰⁰ AESCHYLUS, *THE SUPPLIANTS*, in I. WHITNEY J. OATES AND EUGENE O'NEILL, JR., *THE COMPLETE GREEK DRAMA* 22 (1938).

¹⁰¹ The focus should perhaps be stated somewhat differently. We now have a number of admirable descriptive accounts of political obstacles. See ARTHUR MAASS, *MUDDY WATERS: THE ARMY ENGINEERS AND THE NATION'S RIVERS* (1951); NORMAN WENGERT, *NATURAL RESOURCES AND THE POLITICAL STRUGGLE* (1955); VINCENT OSTROM, *WATER AND POLITICS* (1953). What we lack is a discerning analysis of ways to emerge from the long-standing political impasse.

NATIONAL WATER RESOURCES POLICY ISSUES*

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I

INTRODUCTION

Governmental water resources policy has been subjected to particularly intensive scrutiny and debate during the past decade. The attention which it has received from special study groups, governmental agencies, congressional committees, and candidates for public office attests to the importance with which water resources policy issues have been viewed. Furthermore, during the same period, policies have been changing rapidly as a result of congressional enactments and modifications wrought through the daily operating decisions of federal administrators. In brief, the water resources policy field continues to seethe with activity, which makes analysis difficult and hazardous, but, nonetheless, valuable and interesting.

Water resources development programs embrace a wide range of objectives. Many of the goals have not been explicitly defined; some have become unusually controversial. This paper has been prepared on the premise that an effort to define the issues and compare the positions which have been taken on them will contribute to an understanding of water resources policy problems. More specifically, through an analysis of laws and actions indicative of existing national policy and of the recommendations included in five of the recent policy reports, this paper seeks to accomplish the following:

1. Identify and define some of the significant water resources policy issues.
2. Compare existing federal practice and the recommendations set forth in the five reports, in order to determine the principal areas of agreement and disagreement.
3. Suggest the nature of the problems which must be overcome in order to resolve the issues and evolve a wise national water resources policy for the future.

The interpretation of existing practice is based upon laws, administrative directives and actions, and statements by public officials. The five study groups and their reports selected for comparison are:

* This paper is based upon an over-all study of water resources conducted under the aegis of Resources for the Future, Inc., which is to be published at a later date.

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PRESIDENT'S WATER RESOURCES POLICY COMM'N, *A WATER POLICY FOR THE AMERICAN PEOPLE* (1950) (hereinafter referred to as the Cooke Commission).

MISSOURI BASIN SURVEY COMM'N, *MISSOURI: LAND, AND WATER* (1953) (hereinafter referred to as the Survey Commission).

U. S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *REPORT* (vol. 1, *WATER RESOURCES AND POWER*) (1955) (hereinafter referred to as the Second Hoover Commission).

U. S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *TASK FORCE REPORT ON WATER RESOURCES AND POWER* (1955) (hereinafter referred to as the Task Force).

PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, *WATER RESOURCES POLICY* (1955) (hereinafter referred to as the Advisory Committee).

A primary consideration in selecting the five reports for analysis was the contribution each might make to an understanding of current issues and the differing views which are held on national water resources policy. It was concluded that these official reports, prepared as they were under the auspices of both Democratic and Republican Administrations and reflecting a wide range of opinion, would serve this purpose quite well.¹ Both the majority report of the Second Hoover Commission and the Task Force report are included, because the latter elaborates upon many items covered only briefly or not at all in the Commission's own report.

The documents that deal with national water resources policy fail to provide a precise definition of the term. That suggested by Ackerman, "... a clear, accepted, reasonably stable body of principles which could be used for the guidance of United States water resources development in the public interest,"² most suitably fits the meaning of the term as used throughout this paper. However, the key words, "in the public interest"—a phrase that is open to many different interpretations—require further clarification.

This phrase, as applied to water resources policy, involves three concepts.³ First, is the concept of economic efficiency, which implies that certain activities in the water resources field are undertaken in order to maximize the net economic returns (goods and services) to the nation as a whole. Where this is the objective, the water resources project or program selected would be the one among the available alternatives that would provide the largest net amount of goods and services to the nation.

The second concept involves objectives that cannot be measured in economic terms. The control of floods in a given instance may not maximize economic returns to the nation, but the security which control provides to the inhabitants of the floodplain may be considered to justify the cost. Navigation facilities may be uneconomic,

¹ In the more complete study on which this paper is based, the 1957 report on water policy by the Engineers Joint Council is also considered.

² Ackerman, *Questions for Designers of Future Water Policy*, 38 J. FARM ECON. 971 (1956).

³ The author is indebted to Mr. John Krutilla for assistance in defining these concepts.

but needed for national defense. Water resources development has been undertaken to provide employment opportunities in time of depression, to raise living standards in depressed areas, and to foster the settlement of underdeveloped regions. In brief, it is evident that water resources development has been viewed as one means of helping to provide the economic opportunity, social security, and personal freedom accepted as among the goals of our democratic society. To identify this concept, the term "social and human values" is adopted in this paper.

The third concept involves the comparative efficiency of different institutional arrangements. Where both government agencies and private institutions theoretically can assure the attainment of a given set of objectives—involving either economic efficiency or social and human values—a question may arise as to which can, as a practical matter, conduct the program at the lowest cost. Also, this question may apply between different echelons of government (local, state, and federal) and between different systems of organization within a given echelon. What level of government or what pattern of organization can attain the objectives of the water resources development program at the least cost?

These concepts are seldom sharply defined in any given policy issue. Frequently, all three concepts—economic efficiency, social and human values, and institutional efficiency—are involved. Yet, they underlie the four practical questions which national water resources policy-makers usually consider—namely:⁴

1. What should be the objectives of water resources programs? To what extent do they involve the attainment of economic efficiency, and to what extent do they involve social and human values?
2. What should be the federal responsibility for undertaking water resources development? Assuming a given set of objectives, wherein is the federal government the superior institution to assure efficiency in the attainment of these objectives?
3. How should the costs of national water resources development be shared in light of social and human values and economic efficiency considerations?
4. Assuming a given set of objectives for the national water resources development program, what system of organization will assure the attainment of those objectives at the least cost?

The analysis which follows is concerned with only the first three questions, because the organization of national water resources development activities is the subject of a separate paper in this symposium.⁵ These questions are considered as they apply to four water resources development purposes—namely, flood management, irrigation, power, and municipal and industrial water supply. In a compre-

⁴ Many of the issues considered by the study groups involve procedural instead of policy questions. In fact, of the four questions cited, only the first one may be a true policy issue. In the case of the other three questions, the policy issues involve the guiding principles which underlie the possible answers rather than the questions themselves. Nevertheless, these four questions provide a practical basis for considering the differing views on water resources policy.

⁵ Fessler, *National Water Resources Administration*, *supra* 444-71.

hensive analysis of national water resources policy, numerous other water resources activities would also be treated; but it is believed that those discussed here involve some of the most significant issues and adequately reflect the general nature of the water resources policy problems confronting the federal government.

II

FLOOD MANAGEMENT

Periodically, some part of the nation experiences devastating floods, like those that followed the hurricanes in the Northeast during the summer of 1955. Annually, large and small streams overflow their banks and damage crops, residences, and business establishments in floodplain areas. The Corps of Engineers estimates that there are:⁶

"... unprevented losses of \$420 million annually . . ." in the main river and tributary valleys of the country in addition to the "... losses that occur in the smaller upstream tributaries estimated by the Department of Agriculture to aggregate about \$300 million annually."

As Hoyt and Langbein have stated "... eventually nature demands its toll from these who occupy flood plains."⁷

A. Objectives of Flood Management

The objectives of flood-management activities are twofold. The first involves human and social values. The danger of floods threatens the security of floodplain occupants; when floods occur, public health may be impaired, lives lost, and investments in homes and businesses destroyed, causing incalculable personal hardship. These losses can be measured only partially in economic terms, although they have been major considerations in determining the kind and extent of flood-management activities which are undertaken. The second objective involves the concept of economic efficiency. Installations existing in floodplain areas are subject to damage, and the potential return from floodplain lands—either in the form of agricultural commodities or through other uses—is limited because of the threat of damage. Through what flood-management measures, individually or in combination, can the economic returns to the nation from use of floodplain areas be maximized?

To meet these two objectives—minimizing personal hardship resulting from floods, and maximizing the economic return from floodplain lands—four types of measures are undertaken, as follows:⁸

1. Floodplain use is limited to activities that will not result in inordinate losses when floods do occur. This is done either voluntarily or through governmental zoning of flood plains.

⁶ 1 CHIEF OF ENGINEERS, U. S. ARMY, CIVIL WORKS ACTIVITIES, ANN. REP. VI (1955).

⁷ WILLIAM G. HOYT AND WALTER B. LANGBEIN, FLOODS 4 (1955).

⁸ For discussions of the flood-management problem, see GILBERT F. WHITE, HUMAN ADJUSTMENT TO FLOODS: A GEOGRAPHICAL APPROACH TO THE FLOOD PROBLEM IN THE UNITED STATES (1954); HOYT AND LANGBEIN, *op. cit. supra* note 7; LUNA LEOPOLD AND THOMAS MADDOCK, THE FLOOD CONTROL CONTROVERSY (1954).

2. Flood warnings are issued to permit persons and movable property to be evacuated from the paths of prospective floods.
3. Flood waters are confined to stream channels or special floodways, largely through structural measures, such as reservoirs for impounding flood waters, levees, deepening, widening and straightening of channels, etc. Also, under some conditions, land-treatment measures, such as terracing, contouring, strip-cropping, and improvement of vegetative cover, may reduce flood flows.
4. When floods do occur, individual distress may be alleviated through relief measures, or the costs may be distributed through insurance.

1. *Present Practice*

The objectives of federal flood-management activities have never been precisely defined. The statutes reflect a combination of economic and social objectives, without criteria establishing the extent to which each should govern. Thus, for example, the Flood Control Act of 1936 states:⁹

... that the Federal government should improve or participate in the improvement of navigable waters or their tributaries, including watersheds thereof, for flood-control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected.

It is, accordingly, safe to state that all federal flood-management activities have a combination of economic and social objectives, with some designed more specifically for one purpose than for another.

2. *Policy Recommended by Study Groups*

None of the five study group reports examines this issue. All assume a combination of economic and social objectives, without stating explicitly what they should be.

B. Federal Responsibility for Flood-Management

1. *Present Practice*

Initially, federal flood-control activities were associated with the development of navigation, and prior to 1936, they were largely localized in the Mississippi Valley. However, the Flood Control Act of 1936 marked a radical departure, declaring that "... flood control ... is a proper activity of the Federal Government in cooperation with States, their political subdivisions, and localities thereof." To this end, it authorized the Corps of Engineers to undertake "... Federal investigations and improvements of rivers and other waterways for flood control and allied purposes ..." and the Department of Agriculture to undertake "... Federal investigations of watershed and measures for run-off and waterflow retardation and soil erosion prevention. ..." ¹⁰

Today, the federal government has a large-scale flood-management program, with

⁹ 49 STAT. 1570, 33 U.S.C. §701a (1952).

¹⁰ *Ibid.*

many ramifications. The Corps of Engineers is actively engaged in the construction of flood-control works to protect the main river and tributary valleys. Flood-control storage is included in multiple-purpose reservoirs constructed by the Bureau of Reclamation. The Department of Agriculture, now operating under the Hope-Aiken Act,¹¹ has a nation-wide program for the reduction of flood damages in the upstream tributary valleys. The Weather Bureau maintains a flood-warning service. The Housing and Home Finance Agency has been directed to establish a flood-insurance program under the Federal Flood Insurance Act, which further provides that¹²

After June 30, 1958, no insurance or reinsurance shall be issued . . . in any geographical location unless an appropriate public body shall have adopted and shall keep in effect such flood zoning restrictions, if any, as may be deemed necessary by the Administrator. . . .

And finally, the Office of Civilian Defense, the Corps of Engineers, and other federal agencies cooperate with state and local authorities in relieving distress when major floods occur.

Thus, the federal government is concerned with the construction of flood-control works from the upstream areas, through the major river valleys, to the sea, although the works built under the provisions of the Hope-Aiken Act are constructed by local organizations with federal funds on the basis of the technical advice and assistance of the Department of Agriculture. The flood-warning service is entirely a federal program. Floodplain zoning is considered to be a state and local responsibility, but, as indicated above, after June 30, 1958, issuance of federal flood insurance will be conditioned upon adoption of acceptable zoning regulations. Nevertheless, although the federal government has accepted responsibility for flood insurance, the law states that¹³

In providing insurance or reinsurance under this chapter, the Administrator shall use to the maximum practicable extent the facilities and services of private organizations and persons authorized to engage in the insurance business under the laws of any State. . . .

Localities and individuals are, of course, consulted by the federal agencies, or, as in the case of the small watershed program, a local district undertakes the work with federal technical assistance. The states, moreover, review and comment on federal flood-control reports and are consulted while they are being prepared. And the states and localities have responsibility for floodplain zoning, although they have done little.¹⁴ But, in short, the federal government is clearly the dominant level of government in the field of flood management.

¹¹ Watershed Protection and Flood Prevention Act, 68 STAT. 666 (1954), as amended, 70 STAT. 1088, 16 U.S.C. §§1001-07 (Supp. III, 1956).

¹² 70 STAT. 1082, 42 U.S.C. §2411(c) (Supp. III, 1956). Since the last session of Congress failed to appropriate funds to implement this act, however, the future of the federal flood insurance program is uncertain.

¹³ Federal Flood Insurance Act, 70 STAT. 1082, 42 U.S.C. §2412(a) (Supp. III, 1956).

¹⁴ See HOYT AND LANGBEIN, *op. cit. supra* note 7, at 95: "Flood zoning, like almost all that is virtuous, has great verbal support, but almost nothing has been done about it."

2. Policy Recommended by Study Groups

The five study group reports assume a large measure of federal responsibility for flood management, without defining just what it should be. Only the Task Force proposes a specific limitation on federal participation in structural control measures, stating "... that projects for the alleviation of local and intra-state flood problems, in general, be planned, constructed, operated, and maintained by local government units or by the States affected."¹⁵ The Advisory Committee would encourage nonfederal development, as indicated by the following proposal:¹⁶

As an incentive to non-Federal construction of partnership projects having no vendible products, the Federal Government should increase by 10 percent the amount which it would contribute under the proposed general cost-sharing procedure if the project were to be built by the Federal Government.

Also, it proposes that the federal government make or guarantee loans to state and local bodies to construct water resources projects.¹⁷ The Cooke Commission and the Survey Commission specify that floodplain zoning is the responsibility of state and local governments, but the Survey Commission suggests that the federal government "... require the enactment of State zoning legislation as a condition precedent to the initiation of federally constructed works."¹⁸ None of the five reports considers flood insurance. On the basis of these reports, therefore, there appears to be relatively little objection to federal domination of the flood-management field.

C. Repayment of Flood-Management Costs

1. Present Practice

Federal cost-sharing policy for flood-management activities may be summarized as follows:

1. The cost of the flood-warning service provided by the Weather Bureau is borne entirely by the federal government.
2. For projects of the Corps of Engineers other than reservoirs, channel improvements, or channel rectification (largely levees), the federal government bears the full cost of construction, but local agencies agree to¹⁹

... (a) provide ... all lands, easements, and rights-of-way necessary for the construction of the project ... ; (b) hold and save the United States free from damages due to the construction works; (c) maintain and operate all the works after completion. ...

¹⁵ 1 U. S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, TASK FORCE REPORT ON WATER RESOURCES AND POWER [hereinafter cited as TASK FORCE REPORT] 99 (1955).

¹⁶ PRESIDENTIAL ADVISORY COMM. ON WATER RESOURCES POLICY, WATER RESOURCES POLICY [hereinafter cited as ADVISORY COMM. REPORT] 35 (1955).

¹⁷ *Ibid.*

¹⁸ MISSOURI BASIN SURVEY COMM'N, MISSOURI: LAND AND WATER [hereinafter cited as SURVEY COMM'N REPORT] 18 (1953). Cf. 1 PRESIDENT'S WATER RESOURCES POLICY COMM'N, A WATER POLICY FOR THE AMERICAN PEOPLE [hereinafter cited as COOKE COMM'N REPORT] 145 (1950).

¹⁹ Flood Control Act of 1936, 49 STAT. 1571, as amended, 61 STAT. 501 (1947), 33 U.S.C. §701c (1952).

3. For reservoirs, channel improvements, or channel rectifications constructed by the Corps of Engineers, the federal government bears the full cost of flood control, including the cost of operation and maintenance.²⁰

4. For projects constructed under the Hope-Aiken Act, local organizations must provide lands, easements, or rights-of-way and arrange for defraying the cost of operation and maintenance, but construction costs "applicable to flood prevention and features relating thereto shall be borne by the Federal Government. . . ."²¹

5. Rates paid by policyholders for flood insurance are to be no less than sixty per cent of the rate ". . . which would be adequate . . . to pay all claims for probable losses over a reasonable period of years," and after June 30, 1959, each state is to bear one-half of the amount of the estimated subsidy for policies issued within the state.²²

Thus, the cost of the flood-warning service is borne entirely by the federal government, and only a very small share of the costs of structural measures is borne by non-federal interests. Moreover, flood insurance policy-holders may receive a subsidy as high as forty per cent of the estimated cost of the insurance, with one-half of the subsidy being borne by the states.

2. Policy Recommended by Study Groups

In considering cost-sharing policies applicable to flood management, the five study groups limit their attention to the financing of flood-control structures. The Cooke Commission states that local communities or special districts should assume ". . . an appropriate share of the cost. . . ."²³ The Survey Commission proposes that local beneficiaries ". . . should be assigned assessments up to the value of benefits . . . with allowance for incentives and repayment ability."²⁴ The Second Hoover Commission suggests that nonfederal interests should "share in financial responsibility in proportion to the benefits they receive."²⁵ The Task Force advocates that nonfederal beneficiaries ". . . assume not less than 50 per cent of the non-Federal costs."²⁶ The Advisory Committee does not make specific reference to repayment of flood-control costs, but in the discussion of cost-sharing policy, it states that "As a general principle, the share of the costs to be borne by the beneficiaries should be proportionate to the benefits received."²⁷ In short, the five study group reports agree unanimously that state and local interests should repay a much larger share of the cost of flood control than they do at the present time.

²⁰ It is reported that for some projects which would be authorized by the omnibus bill, S. 497, 85th Cong., 1st Sess. (1957), those realizing enhancement of land values as a result of the flood control would be required to repay part of the cost of the project above the amounts identified in items 2 and 3.

²¹ Watershed Protection and Flood Prevention Act, 68 STAT. 667 (1954), as amended, 70 STAT. 1088, 16 U.S.C. §1004 (Supp. III, 1956).

²² Federal Flood Insurance Act, 70 STAT. 1080, 42 U.S.C. §2406(a) (Supp. III, 1956).

²³ 1 COOKE COMM'N REPORT 85.

²⁴ SURVEY COMM'N REPORT 16.

²⁵ 1 U. S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, WATER RESOURCES AND POWER [hereinafter cited as SECOND HOOVER COMM'N REPORT] 74 (1955).

²⁶ 1 TASK FORCE REPORT 99.

²⁷ ADVISORY COMM. REPORT 27-30.

D. Flood-Management Policy Issues

Comparison of existing practice and recommended policies indicates that the objectives of flood management are not clearly defined by existing law and administrative directives or by the five study group reports.

The significance of this lack of clarity in objectives becomes apparent when one examines the structural-control programs of the Corps of Engineers and the Department of Agriculture. Both seek to reduce flood damages and improve the utility of floodplains. However, the basic objectives of the two agencies involve a substantial difference in emphasis. The Department of Agriculture aims to reduce the risk of farming in floodplain areas, and its program, therefore, emphasizes control of the smaller, more frequent floods. On the other hand, the program of the Corps of Engineers is largely the outgrowth of flood disasters, prevention of which remains a major objective.²⁸

This difference in objectives is reflected in the practices of the two agencies. A policy statement by the Secretary of Agriculture provides that²⁹

... costs shall be less than primary benefits . . . Secondary and intangible benefits should not be used for economic justification. . . ."

This policy will result in the attainment of approximate economic efficiency in the use of floodplain lands if the benefit-cost estimates are reliable and if they are applied to each increment of a system. However, since the extremely large, disastrous floods may occur very infrequently in the same locality and since control of such floods may be very costly, control measures may not be justified on the basis of economic efficiency alone. In view of this consideration, it is the general practice of the Corps of Engineers to design structures of a size that will provide the maximum control attainable under a benefit-to-cost relationship of unity or better. Economists point out that this practice is inconsistent with the attainment of maximum economic efficiency, however, because increments of a given structure or system may have a benefit-to-cost relationship of less than unity. Where both the Corps of Engineers and the Department of Agriculture are considering plans which would provide a degree of protection to the same floodplain area, therefore, this difference in objectives may result in a conflict of views as to what magnitude of program is warranted. Fox and Picken have identified this difference in objectives as an important factor in the current upstream-downstream flood control controversy.³⁰

²⁸ It is evident that the two agencies also have different bases of political support. The valley cities, the farmers with lands in the major floodplains which would be protected, and the contractors who build large structures provide much of the support for programs of the Corps of Engineers. The farmers with lands in the headwaters areas, those whose lands are threatened with inundation by large reservoirs, the merchants who serve these people, together with certain special groups, such as the fish and wildlife organizations, who feel that their interests are best served by upstream programs, provide the nucleus of support for the programs of the Department of Agriculture.

²⁹ SECRETARY OF AGRICULTURE, POLICY FOR THE ADMINISTRATION OF THE WATERSHED PROTECTION AND FLOOD PREVENTION ACT (1956).

³⁰ IRVING K. FOX AND ISABEL PICKEN, THE UPSTREAM-DOWNSTREAM FLOOD CONTROL CONTROVERSY IN THE ARKANSAS-WHITE-RED BASINS SURVEY (to be published).

Under an ideal system of flood management, structural measures, zoning, flood-warning, insurance, and relief measures would be utilized in such a combination that society would realize the most for its money in the way of economic and social returns. Costly structural control would not be provided if the same goals could be realized through less expensive zoning or flood forecasting. In most cases, a combination of measures would probably provide the optimum result. To arrive at such a combination, however, one must know what constitutes an "optimum result." Presumably benefits and costs expressed in monetary terms can be estimated so as to indicate the approximate economic efficiency of a given project. On the other hand, it is difficult to define what costs are justified by identifiable social and human values resulting from a project. Yet, such a judgment is necessary to an optimum program of flood management.

This comparison of existing practice and recommended policy has shown that in acting on cost-sharing policies applicable to flood-management activities, Congress has proceeded in a direction opposite to the course recommended by the study groups. By amending the Hope-Aiken Act so that the federal government pays the full cost of flood-control structures built under that act, practically all flood-control costs are now borne by the federal government. Existing federal practice for flood control poses more sharply than any other activity a basic reimbursement policy issue which is becoming increasingly significant as federal subsidization of water resources development continues to increase. The issue has two aspects which may be expressed as follows: (1) to what extent is it equitable to provide flood control for the benefit of floodplain occupants at the expense of the general taxpayer? and (2) to what extent is it administratively practicable to undertake a flood-management program of optimum efficiency when the beneficiaries bear such a small portion of the costs of the structural program, as is the case under present practice? In view of the recent amendment of the Hope-Aiken Act, it may be argued that these are academic questions as they apply to flood control. Nevertheless, they have important implications for all aspects of water resources development.

III

IRRIGATION

Although the general purpose of irrigation—to promote plant growth and thereby increase the economic returns from agriculture—is the same wherever irrigation is practiced, it is appropriate in this paper to distinguish between three different types of situations. Traditionally, irrigation is associated with the reclamation of arid and semiarid lands; application of water permits the cultivation of lands which may have been almost totally unproductive. The federal Reclamation Act of 1902³¹ was designed primarily to foster irrigation in such areas. The second situation may be typified best by the Great Plains. In this region, dry-land farming is successful during wet climatic cycles, but there are periodic droughts that seriously reduce agri-

³¹ 32 STAT. 388 (codified in scattered sections of 43 U.S.C.).

cultural production. Under these circumstances, irrigation of farm lands provides a more stable income to the farmer and a more stable economy to the immediate area. The third situation applies to the humid sections of the country—namely, the coastal area of the Pacific Northwest and most of the thirty-one eastern states. These areas may also suffer from droughts, and irrigation serves to reduce the farmer's losses which otherwise would result. Of more importance, even in years of so-called normal rainfall, precipitation does not always occur at the proper times and in the proper quantities to maximize plant growth. Thus, the scientific application of water to land in humid areas, even in nondrought periods, can increase crop yields significantly.

It is estimated that nearly 30,000,000 acres of land are irrigated in the United States, ninety-four per cent of which lay in the seventeen western states in 1950.³² Federal irrigation projects supplied water to over 6,000,000 acres in 1955.³³ The federal government has fostered irrigation practices since passage of the Desert Land Act in 1877.³⁴ Although it originally confined its attentions to the seventeen western states, the federal government now is becoming involved in irrigation work throughout the humid East as well, where, stimulated in part at least by recent droughts, interest in irrigation has been growing rapidly.

A. Objectives of Irrigation

Provision of settlement opportunities has been an important objective of the federal irrigation program. The first Commissioner of Reclamation expressed this objective most emphatically in the following statement:³⁵

The object of the Reclamation Act is not so much to irrigate the land as it is to make homes. President Theodore Roosevelt in his message to this Congress today, and in every previous message to this Congress and to the Congress of the United States, has emphasized again and again that the primary objective of the law was to make homes. It is not to irrigate the lands which now belong to large corporations or to small ones; it is not to make these men wealthy; but it is to bring about a condition whereby that land shall be put into the hands of the small owner, whereby the man with a family can get enough land to support that family, to become a good citizen, and to have all the comforts and necessities which rightly belong to an American citizen.

A second objective is that of stabilizing the income of individuals and the economy of areas which suffer periodically from drought. This has been considered a primary objective in the Great Plains regions.

A third objective is that of providing the foundation for the economic development of underdeveloped areas of the nation. In the vast arid and semiarid regions of the West, irrigation projects provide the major basis for an agricultural economy,

³² See 5 U. S. CENSUS OF AGRICULTURE, 1950 SPECIAL REPORTS, IRRIGATION pt. 7, at 3 (1952).

³³ See U. S. DEP'T OF THE INTERIOR ANN. REP. 15 (1956).

³⁴ 19 STAT. 377 (1877), 43 U.S.C. §§321-23 (1952).

³⁵ F. H. Newell's message to the National Irrigation Congress in 1905, as quoted in U. S. DEP'T OF THE INTERIOR, LAND OWNERSHIP SURVEY ON FEDERAL RECLAMATION PROJECTS 91 (1946).

which, in turn, gives rise to the growth of towns to handle the trade of the irrigated areas. Eventually, this may lead to the establishment of other types of industry.

Finally, irrigation is viewed as a means of increasing the production of food and fiber to meet the nation's rapidly growing demands for these commodities.

In analyzing these objectives, it should be recognized that the first two involve, to a very large extent, certain human and social considerations. Thus, society may decide that it is worth while to provide farm settlement opportunities for families, even though large corporate enterprises may be more economic. Similarly, it may decide that areas subject to drought should be assisted in coping with this problem, even if not justified by strictly economic considerations. And although the third objective of developing underdeveloped areas may be sought for reasons of economic efficiency, it may be sought for other purposes as well. Thus, on the one hand, development of such areas may promise a general improvement in the efficiency of the national economy; but on the other hand, the nation may decide to develop such areas in the interest of national defense or for other noneconomic reasons. The fourth objective of producing food and fiber to meet the nation's increasing needs, however, involves only the question of economic efficiency—and to the extent that this is the objective, the public interest dictates that only such irrigation activities be undertaken as are less costly than any of the available alternatives for attaining the same objective.

1. *Present Practice*

In so far as it can be ascertained, present practice recognizes all four of these objectives. However, it is not possible to discern the extent to which each governs.

The provision of settlement opportunities on family-size farms remains a basic tenet of federal irrigation policy in the seventeen western states. Reclamation law provides:⁸⁶

No right to the use of water for land in private ownership shall be sold for a tract exceeding 160 acres to any one landowner. . . .

This has been interpreted to mean that in community property states, a husband and wife may irrigate a maximum of 320 acres with water supplied by a federal project. And a provision in the recently-enacted Small Reclamation Projects Act limits the interest subsidy to those beneficiaries who observe a similar acreage limitation.⁸⁷ However, the Hope-Aiken Act, which permits subsidy of the agricultural phases of "the conservation, development, utilization, and disposal of water,"⁸⁸ including irrigation, contains no reference to the acreage limitation, and, accordingly, it appears that such a provision does not apply. This means that the acreage limitation is

⁸⁶ Reclamation Act of 1902, 32 STAT. 389, 43 U.S.C. §431 (1952).

⁸⁷ 70 STAT. 1046, 43 U.S.C. §422c(c) (Supp. III, 1956). The State Supreme Court of California in *Ivanhoe Irr. Dist. v. All Parties*, 306 P.2d 824 (1957), declared the acreage limitation to be unconstitutional. However, until the matter is settled by the federal courts, the basic policy remains unchanged.

⁸⁸ Watershed Protection and Flood Prevention Act, 68 STAT. 666 (1954), 16 U.S.C. §11001 (Supp. III, 1956).

applicable to federal programs undertaken in accordance with the provisions of reclamation law, but not to programs developed under the Hope-Aiken Act.

Reports of the Bureau of Reclamation and statements by executive and congressional leaders cite the "stabilization of the agricultural economy" and the "development of the West" as important objectives of the irrigation program. Also, the Bureau has analyzed the economic impact of individual projects upon particular areas.³⁹ Finally, in evaluating irrigation projects, the Bureau has given considerable weight to "secondary benefits"—*i.e.*, the benefits to others than the water users—the net of which, economists generally agree, is largely of a local or regional, rather than a national, nature. Thus, in effect, the Bureau's project evaluations have given weight to the local and regional impact of recommended projects.

The Secretary of the Interior, Fred A. Seaton, and the Commissioner of Reclamation, Wilbur Dexheimer, cite the production of food and fiber as an important objective of the federal irrigation program. However, many of these statements appear to be in response to questioning of further investment in irrigation while crop surpluses plague the agricultural economy. For example, Secretary Seaton has stated that⁴⁰

Reclamation lands produce but a tiny percentage of the crops in surplus which are now depressing the prices the farmer receives for his toil and production.

He has stated further, however, that⁴¹

... the time is rapidly approaching when we will be concerned with how rapidly we can bring water and fertility to new acreage that is now unproductive rather than with crop surpluses.

2. Policy Recommended by Study Groups

All five reports specifically support the acreage-limitation principle, and all agree that there should be more flexibility in the law to determine what constitutes a family-size farm. However, the Cooke Commission recommends that this flexibility should apply only to "adjustment downward."⁴²

The Task Force fails to analyze the other possible objectives of the federal irrigation program. Of the remaining four reports, the Cooke Commission offers the most extensive analysis of these objectives. Its conclusions are summarized in the following quotations:⁴³

Special consideration should be given to rehabilitation of existing irrigation projects, both Federal and private, as well as to small new irrigation projects offering the possibility of stabilizing the agriculture of an area.

³⁹ See *e.g.*, M. E. MARTS, *AN EXPERIMENT IN THE MEASUREMENT OF THE INDIRECT BENEFITS OF IRRIGATION* (1950).

⁴⁰ Speech by Fred A. Seaton, Chicago, Ill., Oct. 18, 1956.

⁴¹ Speech by Fred A. Seaton, Loveland, Colo., Aug. 11, 1956.

⁴² 1 COOKE COMM'N REPORT 174. Cf. SURVEY COMM'N REPORT 20; 1 SECOND HOOVER COMM'N REPORT 54; 1 TASK FORCE REPORT 97-98; ADVISORY COMM. REPORT 34.

⁴³ 1 COOKE COMM'N REPORT 14, 164. Others have attached much less significance to irrigation as a means of meeting future demands for agricultural commodities than does the Cooke Commission. See, *e.g.*, 1 PRESIDENT'S MATERIALS POLICY COMM'N, *RESOURCES FOR FREEDOM* 45-50 (1952).

The weight to be given reclamation of land . . . in determining the relative priority of programs and order of construction of specific multiple-purpose projects should be based on regional as well as national considerations.

In general, this analysis has shown that reclamation of new land through irrigation, flood control, drainage, and clearing, and improvement in the use of existing farm lands, must move forward together if the future needs of the nation are to be met.

In brief, then, the Cooke Commission gives a measure of support to all three objectives. It is noteworthy, however, that it is the "priority of programs" and the "order of construction" which should be based on regional considerations. In view of the emphasis upon economic evaluation in the report,⁴⁴ this would appear to mean that projects should first meet minimum requirements of economic efficiency. The Survey Commission, too, observes that "the need for irrigation to increase future food supply is evident in the latest population data," and that "irrigation serves to stabilize agriculture against periods of drought and climatic vagaries."⁴⁵ And the Second Hoover Commission accepts regional development as a major objective of federal irrigation programs, stating:⁴⁶

The justification for Federal interest in irrigation is not solely to provide land for farmers or to increase food supply. These new farm areas inevitably create villages and towns whose populations thrive from furnishing supplies to the farmer, marketing his crops, and from the industries which grow around these areas.

While recognizing the past importance of water resources development to regional growth, however, it is significant that the Advisory Committee recommends that water resources development projects should be justified largely on the basis of primary benefits.⁴⁷ In other words, contrary to present practice, it would require irrigation projects to meet the objective of economic efficiency from the national point of view.

B. Federal Responsibility for Irrigation

1. *Present Practice*

The federal government has assumed a large measure of responsibility for irrigation activities. Under the Reclamation Act of 1902, as amended, it builds and operates large-scale projects in the seventeen western states. Under the Small Reclamation Projects Act, technical assistance is provided and funds are loaned to irrigation districts in the seventeen western states for the construction of small projects. Under the Hope-Aiken Act, irrigation may be included as one of the purposes in a small watershed project. Also, under the Water Facilities Act,⁴⁸ loans are made to farmers for developing water supplies for irrigation and other purposes. Finally, the Corps of Engineers, in cooperation with the Department of Agriculture, is investigating irrigation potentialities in the Delaware, Potomac, and lower Mississippi Valley areas,

⁴⁴ I COOKE COMM'N REPORT 55-65.

⁴⁵ SURVEY COMM'N REPORT 161.

⁴⁶ I SECOND HOOVER COMM'N REPORT 44.

⁴⁷ ADVISORY COMM. REPORT 25.

⁴⁸ 50 STAT. 869 (1937), as amended, 68 STAT. 735 (1954), 16 U.S.C. §§590f-x (Supp. III, 1956).

and presumably, if conditions so warrant, reservoirs will be recommended for federal construction which make provision for storage to meet irrigation needs.

Although the federal role is extensive, states, local units, and individuals have undertaken a major share of the task of irrigating land. Thus, California is embarking upon an extensive state water resources development program. For many years, Montana too, has had a modest program for the construction of small irrigation projects. And Utah and several other states loan funds to finance irrigation development. Much of the new irrigation also continues to be initiated by private individuals and groups, particularly in areas where ground water supplies are available. During the past decade, for example, the enormous increase in irrigated acreage in the High Plains of Texas has been the result of individual rather than governmental action.

In brief, then, where surface water supplies are involved, the federal government plays a major role in irrigation development. On the other hand, developments based upon ground water sources continue to be undertaken by private individuals.

2. Policy Recommended by Study Groups

The five study groups make no effort to define the federal role in irrigation development, although all assume a large measure of federal responsibility.⁴⁹ It is noteworthy, however, that the five reports devote little attention to the role of the federal government in irrigation development outside of those seventeen western states where it has been a traditional federal responsibility.

C. Repayment of Irrigation Costs

1. Present Practice

Existing and recommended policies relating to repayment of federal expenditures for irrigation works are exceedingly complex. Under reclamation law, water users are expected to repay the construction cost, without interest, within a period of forty years.⁵⁰ In actual practice, however, longer repayment periods have been allowed by Congress for a number of projects.⁵¹ Also, for many years power revenues have been utilized to help repay the construction cost of irrigation facilities. Two different procedures have been used—namely:

1. Revenues from power projects received after the full amount of the capital costs of the power facilities are repaid are applied to the repayment of irrigation construction costs. This procedure is favored by the Eisenhower Administration and is the one to be used for the Colorado River Storage Project.
2. Under a ruling of the Solicitor of the Department of the Interior, the interest

⁴⁹ The Advisory Committee would encourage nonfederal development by making and guaranteeing loans to state and local bodies and by increasing the amount of the federal subsidy by ten per cent above what it would be under federal development. See p. 478 *supra*, for discussion of this point in relation to flood control.

⁵⁰ Omnibus Adjustment Act of 1926, 44 STAT. 649, 43 U.S.C. §423c (1952).

⁵¹ See 3 COOKE COMM'N REPORT 208, citing thirteen projects having repayment periods in excess of 40 years.

component of the amount repaid from power revenues was applied to the repayment of irrigation construction costs. This practice was changed by the Eisenhower Administration, so that very few projects will benefit from it, although it was used in the justification of such programs as the Missouri Basin Project.

For irrigation costs incurred under the Hope-Aiken Act, local organizations are required to repay an amount "... which is equal to the ratio of direct identifiable benefits to total benefits produced by such works of improvement. . . ." However, the Department of Agriculture's policy also provides that "... in no event will the federal share of the cost exceed the equivalent federal assistance available for other project-type programs."⁵² It will not be clear as to how much of a federal subsidy is involved in these practices, however, until there has been more experience under the Hope-Aiken Act. Under one interpretation of the above quotation, the maximum amount of the subsidy would be the same as the subsidy allowed under projects of the Bureau of Reclamation.

The Small Reclamation Projects Act provides for fifty-year, interest-free loans to finance irrigation development, to the extent the 160-acre limitation is observed.⁵³ Loans made under the provisions of the Water Facilities Act, however, must be repaid with interest.

In all cases, the costs of operation and maintenance are borne entirely by the local interests.

2. Policy Recommended by Study Groups

The reclamation repayment policies recommended are equally complex. The differing views are as follows:

1. The Cooke Commission⁵⁴ and the Advisory Committee⁵⁵ would permit delivery of water to farms exceeding the acreage limitation, provided that the water user pays all costs, including an appropriate share of interest on the irrigation investment. The other study groups are silent on this point.
2. The Cooke Commission⁵⁶ and the Survey Commission⁵⁷ emphasize that the primary beneficiaries should repay in accordance with their ability; the Advisory Committee proposes that the "... costs to be borne by the beneficiaries should be proportionate to the benefits received";⁵⁸ and the Task Force recommends that the identifiable beneficiaries "... bind themselves to pay at least 50 per cent of the cost prorated to them ... with interest."⁵⁹
3. By one means or another, all five of the study groups would require the indirect beneficiaries to repay a portion of the project costs.⁶⁰

⁵² SECRETARY OF AGRICULTURE, *op. cit.* *supra* note 29.

⁵³ 70 STAT. 1046, 43 U.S.C. §422e(c) (Supp. III, 1956).

⁵⁴ 1 COOKE COMM'N REPORT 174.

⁵⁵ 1 COOKE COMM'N REPORT 84.

⁵⁶ ADVISORY COMM. REPORT 30.

⁵⁷ ADVISORY COMM. REPORT 34.

⁵⁸ SURVEY COMM'N REPORT 16.

⁵⁹ 1 TASK FORCE REPORT 98.

⁶⁰ SEC 1 COOKE COMM'N REPORT 84; SURVEY COMM'N REPORT 16; 1 SECOND HOOVER COMM'N REPORT 52; 1 TASK FORCE REPORT 98; ADVISORY COMM. REPORT 30.

4. The Cooke Commission,⁶¹ the Second Hoover Commission,⁶² and the Task Force⁶³ recommend specifically that the cost of operation and maintenance be borne by the beneficiaries. The Advisory Committee proposes that "responsibility for bearing the cost of maintenance and operation . . . should be turned over to non-Federal interests as soon as it is soundly feasible. . . ."⁶⁴
5. Only the Advisory Committee and the Task Force refer to the use of power revenues to finance irrigation facilities. The Advisory Committee approves their use "... provided the project to which such benefits are applied is part of the area from which such revenues are derived."⁶⁵ The Task Force unequivocally opposes the practice.⁶⁶

The most significant point in these recommendations is that all study groups agree that there should be a substantial federal subsidy of irrigation development, even though the precise formula for determining repayment varies among the reports. Nevertheless, they indicate that nonfederal interests should pay a major share of the costs.

D. Irrigation Policy Issues

This analysis suggests that a fundamental irrigation policy issue concerns the relative importance of economic efficiency and of noneconomic considerations in justifying irrigation programs. Most observers agree that the irrigation features of relatively few western water projects meet the conditions of national economic efficiency. Social objectives were of paramount importance in the initiation of the federal reclamation program and apparently retain a considerable, though hard to measure, importance in the public mind. However, noneconomic considerations cannot be numerically defined and equated with costs.

One solution to this problem is that apparently intended by the Cooke Commission and the Advisory Committee—namely, to require that all projects, as a minimum, meet the requirement of national economic efficiency. As a practical matter, this means that a benefit-cost ratio of unity or better without secondary benefits would be necessary.⁶⁷ In view of the small proportion of projects which can meet this requirement and the continued political support for western irrigation development, such a proposal would appear to have little chance of adoption. Another possibility would be to relate the noneconomic considerations to the cost of the project above the amount justified on the basis of national economic efficiency alone. This would provide the President and the Congress with a better opportunity than at present for making a value judgment as to whether noneconomic considerations justify their costs. Such an explicit identification of the noneconomic nature of most

⁶¹ COOKE COMM'N REPORT 84.

⁶² I TASK FORCE REPORT 99.

⁶³ *Id.* at 33.

⁶⁴ I SECOND HOOVER COMM'N REPORT 52.

⁶⁵ ADVISORY COMM. REPORT 30.

⁶⁶ I TASK FORCE REPORT 57.

⁶⁷ The position of the Cooke Commission is not entirely clear on this point. For example, it states that "... many projects will have their major effect on the broad development of our social economy. It will, therefore, be contrary to the public interest to place principal reliance in project analysis on primary benefits, which may often be private in character." I COOKE COMM'N REPORT 56.

western irrigation projects might, however, be as restrictive as the requirement that they have a benefit-cost ratio of unity or better without secondary benefits.

A second major issue relates to the future federal role in irrigation development. Irrigation is a traditional activity of the federal government. However, this tradition is limited to the arid and semiarid lands of the seventeen western states, where the major objectives have been to provide settlement opportunities, to develop the West, and to stabilize a drought-plagued agriculture. The really pertinent question is that of the federal role in the thirty-one eastern states, where land ownership patterns, climatic conditions, and economic factors are quite different than in the West. As the Corps of Engineers and the Department of Agriculture proceed with their programs to develop water resources in the thirty-one eastern states, it is hard to see how they can avoid consideration of irrigation water demands; such demands must be taken into account if the best development of the nation's water resources is to be realized. Accordingly, it appears that where irrigation can be practiced economically and surface sources of supply are needed, the federal government will assume a major role in the development of irrigation. If this should happen, what are to be the objectives of the federal program? Should the noneconomic objectives associated with western irrigation, which have offered most of the rationale for western subsidies, be applicable to the developed, humid East? This question assumes its most specific form as it applies to the acreage limitation. If the acreage limitation is not applied in the East, can it continue to be applied in the West?

A third issue is that of repayment of federal irrigation costs. The history of irrigation repayment policies under reclamation law has been characterized by a progressive increase in the federal subsidy. This has been done by using power revenues and by extending the repayment period from ten years under the Reclamation Act of 1902 to the present practice of forty years or more. As in the case of flood management, this trend poses the question of the extent to which it is equitable for the general taxpayer to subsidize the irrigation water user. Nevertheless, the situation is not entirely comparable with flood control, because the irrigator is, in general, required to pay a larger part of the cost than the flood-control beneficiary.

Another facet of the issue involves the question of consistency of repayment policy among agencies. It has been noted that irrigation developed under the Hope-Aiken Act may involve a federal subsidy, but the amount of the subsidy is not determinable, although it could be as great as the subsidy permitted under western reclamation law. Whatever the subsidy may be, the irrigator under reclamation law would be required to observe the acreage limitation in order to benefit from the subsidy, whereas the irrigator under the Hope-Aiken Act would not. Also, what repayment provisions will govern in the case of irrigation storage provided in Corps of Engineers reservoirs constructed in the thirty-one eastern states? No policies have been enunciated. What will be the extent of the federal subsidy, if any, and will the acreage limitation be a condition which one must meet to benefit from the subsidy? It appears that these questions will confront federal policy-makers in the near future.

IV

HYDROELECTRIC POWER⁶⁸

The federal government has been actively engaged in the production and marketing of electric power, as an integral part of water resources development, since the early days of the federal reclamation program.⁶⁹ As of December 31, 1955, the installed capacity of federal generating facilities totalled 16,962,000 kilowatts out of a total installed capacity for the nation, both public and private, of 114,371,000 kilowatts.⁷⁰ Federal production and marketing of power continues to be the most controversial water resources policy issue.

A. Objectives of Power Activities

A review of the present practice and the study group reports reveals six objectives associated with federal power development and marketing. These are as follows:

1. To maximize the economic returns to the nation from the development of its water resources.
2. To supply an important part of the nation's future power needs.
3. To service federally-owned power-consuming installations.
4. To help finance the development of irrigation.
5. To promote the widespread use of electricity so that as many people as possible may enjoy the benefits of electric energy.
6. To provide a "yardstick" for gauging the efficiency of privately-owned utilities and as a competitive force for stimulating improved public service.

In the analysis which follows, existing practice and recommended policies are compared as they relate to these objectives.

1. *Present Practice*

It is difficult to determine from any analysis of current practices the extent to which each of the foregoing objectives governs federal power activities. First, there is no clear policy statement that the attainment of economic efficiency in the development of water resources is a major objective of the federal power program. However, this appears to be implicit in existing procedures for economic evaluation of power projects in which benefits are, in general, based upon estimates of alternative costs for providing equivalent power. Secondly, the federal government has not indicated what part of the nation's future power needs should be supplied from hydroelectric sources, although Secretary Seaton has stated that during the next

⁶⁸ The author is particularly indebted to Henry P. Caulfield, Jr., of Resources for the Future, Inc., for assistance in the preparation of this section. Mr. Caulfield is engaged in a comprehensive study of federal electric power policy.

⁶⁹ The first federal power project was Roosevelt Dam on the Salt River in Arizona, placed in service in 1910.

⁷⁰ See EDISON ELECTRIC INSTITUTE, *ELECTRIC UTILITY INDUSTRY IN THE UNITED STATES, STATISTICAL BULLETIN FOR THE YEAR 1955*, Table 2, at 6 (Pub. No. 56-2 1956).

twenty years "... only 8½ percent of the needed new generating capacity can possibly come from hydroelectric plants."⁷¹

On the other hand, federal practice has long recognized that one objective of federal power development is to service federal installations. For example, a large part of the power output of the TVA is for federal atomic energy installations. The use of power revenues to finance irrigation development is also an established policy of the federal government and continues to be recognized in such legislation as the Colorado River Storage Project Act.⁷² And the objective of promoting the widespread use of electric power is stated in numerous statutes and administrative orders.

This last objective has been associated with provisions in law for preferential treatment in the sale of power to public bodies. Numerous statutes, including flood control law,⁷³ general reclamation law,⁷⁴ the Tennessee Valley Authority Act,⁷⁵ the Bonneville Project Act,⁷⁶ the Fort Peck Project Act,⁷⁷ and the Falcon Dam Act,⁷⁸ require that in the sale of power from federal dams, preference shall be given to public bodies and cooperatives. The TVA Act, the Fort Peck Act, and the Falcon Dam Act, in fact, assert that it is the policy of the federal government to encourage the widest possible use of electric power.⁷⁹ Thus, too, the power policy of the Department of the Interior, as issued in August 1953, states that⁸⁰

... the Department will give preference and priority to public bodies and co-operatives in disposing of electric energy generated at Federal plants. It will be the policy of the Department to dispose of power, remaining after provision for existing preference customers, to privately owned public utilities serving domestic and rural customers in the area.

It must be recognized, however, that the "partnership policy" of the Eisenhower Administration tends, in some degree, to offset the effect of the preference clause. To the extent that hydroelectric power is developed and distributed by private interests, the Government is unable to extend the benefits accorded by the preference clause to public bodies and cooperatives.

It is impossible to determine the extent to which the "yardstick" principle is applicable to present practice. The "partnership policy" does not seem compatible with the view that federal power development should be used as a device for regulating and stimulating the power industry. To the extent that the Administration's

⁷¹ Speech by Fred A. Seaton, Chicago, Ill., Oct. 18, 1956.

⁷² 70 STAT. 105, 43 U.S.C. §620 (Supp. III, 1956).

⁷³ Flood Control Act of 1944, 58 STAT. 890, as amended, 16 U.S.C. §825s (Supp. III, 1956).

⁷⁴ Reclamation Project Act of 1939, 53 STAT. 1193, as amended, 43 U.S.C. §485h(c) (1952).

⁷⁵ 48 STAT. 64 (1933), as amended, 16 U.S.C. §831i (1952).

⁷⁶ 50 STAT. 733 (1937), as amended, 16 U.S.C. §832c (1952).

⁷⁷ 52 STAT. 405 (1938), 16 U.S.C. §833c (1952).

⁷⁸ 68 STAT. 255 (1954).

⁷⁹ Wide use of power is a major objective of the Rural Electrification Administration, which lends federal funds to local bodies for the production and marketing of power for rural areas. Also, the cooperatives which receive most of these loans are entitled to preference in the sale of federally-produced power.

⁸⁰ Statement of Power Policy issued Aug. 18, 1953 and signed by Undersecretary of the Interior Ralph Tudor.

partnership policy succeeds in transferring the task of developing power facilities at federal projects to private enterprise, therefore, the federal government may not be able to apply the "yardstick" principle. However, the federal government is continuing to operate existing facilities, and additional facilities are being built by the federal government. Thus, as a practical matter, the federal government continues to be an important factor in the power industry.

2. Policy Recommended by Study Groups

Specific statements in the reports of the Cooke Commission,⁸¹ the Survey Commission,⁸² and the Second Hoover Commission⁸³ support the view that power development is necessary to realize the maximum benefit from the nation's water resources. On the other hand, the Task Force states "that the mere presence of potential water power in connection with a Federal project does not constitute a mandate for its development."⁸⁴ The Advisory Committee does not comment on this question.

The Cooke Commission⁸⁵ and the Survey Commission⁸⁶ envisage federally-developed hydroelectric power as contributing an important part of the nation's future power needs, whereas the other three study groups do not discuss this point.

The reports appear to accept as appropriate federal production of power to supply federal needs. For example, the Task Force suggests that the Atomic Energy Commission assume responsibility for the power facilities of the TVA used to supply atomic energy installations.⁸⁷ Also, the Survey Commission states that "disposition of power to preference customers should be subject only to the prior requirements of the government itself for direct use. . . ."⁸⁸

As discussed in the section on irrigation, the Advisory Committee approves the use of power revenues to finance irrigation development, the Task Force objects to the practice, and the other three reports are silent on this point.⁸⁹

The Cooke Commission⁹⁰ and the Survey Commission⁹¹ support the "preference clause" and the objective of encouraging widespread use of electric energy. The Second Hoover Commission and the Task Force, however, support a repeal of the "preference clause" because ". . . in equity the private utilities and their customers should be able to secure a fair share of the Government power on equal terms with preference organizations."⁹² In lieu of the "preference clause," the Task Force suggests a provision that ". . . no purchaser of Federally generated power shall receive more than a fair return from the resale thereof. . . ."⁹³ The Advisory Committee does not discuss this objective.

In considering the impact of federal development on the power industry, the

⁸¹ 1 COOKE COMM'N REPORT 227.

⁸² 1 SECOND HOOVER COMM'N REPORT 118.

⁸³ 1 COOKE COMM'N REPORT 240.

⁸⁴ 1 TASK FORCE REPORT 76.

⁸⁵ See notes 65 and 66 *supra* and text cited thereto.

⁸⁶ 1 COOKE COMM'N REPORT 245.

⁸⁷ 1 SECOND HOOVER COMM'N REPORT 112-13.

⁸⁸ SURVEY COMM'N REPORT 154-55.

⁸⁹ 1 TASK FORCE REPORT 57.

⁹⁰ SURVEY COMM'N REPORT 138.

⁹¹ SURVEY COMM'N REPORT 156.

⁹² SURVEY COMM'N REPORT 19.

⁹³ 1 TASK FORCE REPORT 97.

Cooke Commission refers to the "... mixed system of public and private operation ..." of the power industry as "... the system which has given force to regulation of private power corporations. ..."⁹⁴ The report also states that this system "... offers the possibility of actual or potential competition to stimulate what would otherwise be publicly sanctioned monopolies. ..."⁹⁵ Neither the Survey Commission nor the Advisory Committee discuss this issue. Both the Second Hoover Commission and the Task Force, however, object to the Cooke Commission view. The Second Hoover Commission indicates that federal power development as a regulatory force is unnecessary because "the regulation of electric utilities ... by both state and Federal governments has become effective";⁹⁶ and the Task Force asserts that federal power is not an appropriate "yardstick" since "... Federal power, because of low-interest financing, and failure to include taxes, has been sold at rates below those that private utility companies could meet."⁹⁷

B. Federal Responsibility for Power Activities

There are four major policy issues relating to federal responsibility for power production and marketing—namely:

1. Should the federal government construct and operate hydroelectric generating facilities?
2. Should the federal government construct and operate transmission facilities?
3. Should the federal government construct fuel-generating facilities for operation in conjunction with federally-owned hydroelectric facilities?
4. Should the federal government assume responsibility for producing sufficient power to meet the requirements of an area or a region?

1. Present Practice

Under the Federal Power Act, the Federal Power Commission is expected to advise the Congress whenever it "... shall find that any government dam may be advantageously used by the United States for public purposes in addition to navigation. ..."⁹⁸ Thus, this act assumes the existence of a federal role in hydroelectric power development. The power policy statement of the Department of the Interior, moreover, includes the following:⁹⁹

The Department will particularly emphasize those multi-purpose projects with hydroelectric developments which, because of size or complexity, are beyond the means of local, public or private enterprise.

Presumably, the Colorado River Storage Project falls in this category. Actions by the Administration in opposing federal development of the Hells Canyon site and in support of "partnership" projects, however, indicate a policy of reducing federal

⁹⁴ 1 COOKE COMM'N REPORT 228.

⁹⁵ *Ibid.*

⁹⁶ 1 SECOND HOOVER COMM'N REPORT 120.

⁹⁷ 1 TASK FORCE REPORT 13-14.

⁹⁸ 41 STAT. 1065 (1920), as amended, 49 STAT. 839 (1935), 16 U.S.C. §797(e) (1952). See also 41 STAT. 1067 (1920), as amended, 49 STAT. 842 (1935), 16 U.S.C. §800(b) (1952).

⁹⁹ Statement of Power Policy, *supra* note 80.

participation in hydroelectric power development. Again, the question arises as to what is actual practice? In the past, the federal government has undertaken projects which might have been undertaken by private power interests. But deauthorization of the Alabama-Coose Project by the Congress, in order to permit private development,¹⁰⁰ failure of Congress to authorize Hell's Canyon, and the lack of new federal starts in the hydroelectric-power-rich Northwest suggests a change from past policy.

Federal law authorizes the construction of transmission facilities,¹⁰¹ Congress continues to appropriate money for this purpose, and federal agencies continue to build and operate them. The power policy statement of the Department of the Interior, too, provides that the Department will build needed transmission lines, but that the facilities of other public or private agencies will be utilized when service is made available upon "reasonable terms." The definition of "reasonable terms" is as follows:¹⁰²

These terms shall generally be such that the Federally produced power will be made available to customers at costs no higher than would result from the construction of transmission facilities by the Federal Government.

On the fuel-generation issue, existing practice varies between the Tennessee Valley and the rest of the nation. Federally-owned fuel-generating facilities are significant only in the Tennessee Valley. Administration efforts to provide additional facilities in that area through the Dixon-Yates contract indicate that it does not favor federal construction of steam-generating facilities. Nevertheless, the Administration is now supporting legislation to permit the TVA to float revenue bonds to finance the construction of such facilities.¹⁰³ Congress, however, has been cool toward federal construction of fuel-generating plants.

Closely associated with the foregoing issue is the question of federal responsibility as a utility for supplying the power of an area. This issue is particularly pertinent to the situation in the Tennessee Valley and the Pacific Northwest. The policy of the Administration, as expressed in the power policy statement of the Department of the Interior, provides that:¹⁰⁴

It is recognized that the primary responsibility for supplying power needs of an area rests with the people locally. . . . The Department does not assume that it has the exclusive right or responsibility for the construction of dams or the generation, transmission and sales of electric energy in any area, basin, or region.

Administration support of "partnership" projects in the Northwest further appears to be in accord with the view that the federal government should not assume a

¹⁰⁰ 68 STAT. 302 (1954).

¹⁰¹ See, e.g., Flood Control Act of 1944, 58 STAT. 890, as amended, 16 U.S.C. §825s (1952); Tennessee Valley Authority Act, 48 STAT. 65 (1933), 16 U.S.C. §831k (1952).

¹⁰² Statement of Power Policy, *supra* note 80.

¹⁰³ See U. S. BUREAU OF THE BUDGET, THE BUDGET OF THE U. S. GOVERNMENT FOR THE FISCAL YEAR ENDING JUNE 30, 1958, at M-54 (1957).

¹⁰⁴ Statement of Power Policy, *supra* note 80.

responsibility for meeting the power needs of that area. On the other hand, its support of issuance of revenue bonds by the TVA to finance power development to meet future needs in the Valley suggests a belief that the federal government must continue to assume a utility responsibility in that area.

2. *Policy Recommended by Study Groups*

The Advisory Committee does not examine federal responsibility for hydroelectric power activities, but the other four reports devote considerable attention to this issue. The Cooke Commission and the Survey Commission recognize that the federal government has a major responsibility for the development of hydroelectric power resources. The Cooke Commission is most explicit on this point, observing that,¹⁰⁵

Full development of the Nation's undeveloped water power resources, as an integral part of comprehensive basin programs, should be considered a major Federal responsibility, to be exercised in such a way as to assure ample supplies of hydroelectric energy well in advance of expanding regional and national needs.

Both commissions, however, would permit the licensing of nonfederal interests under conditions which they believe would assure protection of the public interest. For example, the Survey Commission states that¹⁰⁶

Non-federal interests, both public and private, should be licensed to develop water power sites when, in the opinion of the agency responsible for the unified river plan, their proposals are harmonious with multi-purpose development, management, and use of the river and the power is marketed in the public interest.

The Second Hoover Commission, taking a different tack, proposes "... that private enterprise be offered the opportunity to provide the capital for the electrical component of multiple-purpose dams and dispose of the power through their own systems. . . ."¹⁰⁷ The Task Force report, too, includes a series of far-reaching recommendations which would minimize federal activity in the power field. First, it proposes that the federal government "... invite and be receptive to proposals from non-federal interests, public or private, to purchase or lease all Federal electric power facilities not needed for the conduct of Government business. . . ." Secondly, it recommends that when power development is undertaken, "... generating facilities be built by others than the Federal Government. . . ." And finally, it states "that, where it is now or may in the future become unavoidable in terms of fair returns that the Federal Government construct electric generating facilities, . . . the facilities be leased to a non-Federal entity . . ."; and where this is impracticable "... the power be disposed of at the generating station or at the nearest practicable point thereto."¹⁰⁸

Views on federal responsibility for construction of transmission lines parallel views on federal responsibility for construction and operation of generating facilities. Both the Cooke Commission and the Survey Commission consider that federal agencies

¹⁰⁵ I COOKE COMM'N REPORT 16.

¹⁰⁷ I SECOND HOOVER COMM'N REPORT 122.

¹⁰⁶ SURVEY COMM'N REPORT 19.

¹⁰⁸ I TASK FORCE REPORT 95-96.

should have authority to build transmission lines. However, both agree that private power facilities should be utilized where it is advantageous to do so. The Cooke Commission states the problem as follows:¹⁰⁹

... Federal arrangements for marketing power should where possible take full advantage of private power facilities, provided the contracts preserve the preferential rights of public bodies and cooperatives to a share of the power, or its equivalent, at the lowest possible rates.

Both the Second Hoover Commission¹¹⁰ and the Task Force,¹¹¹ however, unequivocally oppose federal construction of transmission lines.

Similarly, on the fuel-generation issue, the Cooke Commission¹¹² and the Survey Commission¹¹³ would permit federal construction and operation of such facilities, and the Second Hoover Commission¹¹⁴ and the Task Force¹¹⁵ oppose such action.

The Survey Commission, the Second Hoover Commission, and the Advisory Committee fail to discuss federal responsibility for meeting the power needs of an area. The Cooke Commission, however, states that¹¹⁶

Where the Federal government assumes a major responsibility for the power supply to distribution systems, this should be recognized as a utility responsibility, requiring the construction of new generating capacity, whether hydroelectric or steam electric, well in advance of expanding needs.

But the Task Force directly opposes this view stating that federal agencies should not "... make contracts for the sale of Federal power which have, or might have, the effect of causing the agency to undertake a public utility obligation to any area or region. ..."¹¹⁷

C. Repayment of Power Costs

There is full agreement among the five reports that the federal investment in power facilities should be repaid with interest. Present practice conforms, in general, with this policy. The power policy statement of the Department of the Interior provides that¹¹⁸

Rate schedules will be prepared on a basis which will provide for the cost of producing and transmitting the energy and will return the capital investment in generation and transmission facilities together with interest in not more than 50 years.

With a few exceptions, federal power facilities appear to meet these general requirements, although there is considerable dispute as to what costs should be allocated to power and what interest rates should apply. On the other hand, a major disagreement centers on the question of payments in lieu of taxes, which is discussed in the paragraphs which immediately follow.

¹⁰⁹ 1 COOKE COMM'N REPORT 16. Cf. SURVEY COMM'N REPORT 19.

¹¹⁰ 1 SECOND HOOVER COMM'N REPORT 113.

¹¹¹ 1 COOKE COMM'N REPORT 16.

¹¹² 1 COOKE COMM'N REPORT 16.

¹¹³ 1 SECOND HOOVER COMM'N REPORT 112.

¹¹⁴ 1 COOKE COMM'N REPORT 16.

¹¹⁵ STATEMENT OF POWER POLICY, *supra* note 80.

¹¹⁶ 1 TASK FORCE REPORT 96.

¹¹⁷ SURVEY COMM'N REPORT 19.

¹¹⁸ 1 TASK FORCE REPORT 96.

¹¹⁹ 1 TASK FORCE REPORT 96.

1. *Present Practice*

With the exception of the Tennessee Valley Authority, federal water resources agencies do not, as a general rule, make payments in lieu of taxes. The TVA pays in lieu of taxes to states in its service area an amount equal to five per cent of its revenues from all sales of power, excepting sales to agencies of the federal government.¹¹⁹

2. *Policy Recommended by Study Groups*

All five reports agree that payments in lieu of taxes are appropriate. Differences focus upon the principles which should determine the amount of such payments to state and local agencies, and whether payments in lieu of federal taxes are warranted. The Cooke Commission recommends that payments to state and local governments "... should not exceed those [taxes] previously paid for properties taken over."¹²⁰ The Survey Commission suggests that "... Federal contributions should take into consideration the extent of actual loss, the effect of Federal ownership on the services of state and local governments, and the local benefits from Federal ownership."¹²¹ Neither report recommends payments in lieu of federal taxes. On the other hand, the majority of the Second Hoover Commission¹²² and its Task Force¹²³ advocate payments in lieu of taxes which would equal the amount that would be paid by a nongovernmental producer as taxes to local, state, and federal governments. The Advisory Committee suggests that¹²⁴

... revenue producing water resources projects should be considered in the same category as other Government business enterprises and that when general legislation is enacted, requiring such Federal activities to make payments in lieu of taxes, water resources projects be included on the same basis as other similar enterprises.

D. Power Policy Issues

It is in this field that the differences among the study groups are the most sharply defined. It is this aspect of water resources policy which has been subject to the most heated political debate. The argument has centered on the question of whether it is appropriate for the federal government to participate actively in the development of the nation's hydroelectric power resources. Power policy issues are concerned with three basic questions—namely:

1. Is it appropriate for the federal government to utilize its position in the development of water resources to promote the widespread use of electricity?
2. To what extent should public development of power be used as a means of regulating and stimulating the power industry to provide good service?
3. How can the water and power resources of the nation be developed to maximize the economic returns to the nation?

The first issue involves the question of whether it is socially desirable for the

¹¹⁹ See TVA ANN. REP. 39 (1955).

¹²¹ SURVEY COMM'N REPORT 16.

¹²³ I TASK FORCE REPORT 106.

¹²⁰ I COOKE COMM'N REPORT 84.

¹²² I SECOND HOOVER COMM'N REPORT 111.

¹²⁴ ADVISORY COMM. REPORT 34.

federal government to promote the widespread use of electric energy and whether the preference clause is the best means for attaining such an objective. On this point, the study groups differ sharply, the Cooke Commission and the Survey Commission supporting the preference clause, and the Second Hoover Commission and the Task Force opposing it.

The second issue involves the question of whether state and federal regulatory machinery constitutes an adequate method of assuring operation of the public power industry in conformity with the public interest. The Cooke Commission views the mixture of public and private power as "... the system which has given force to regulation of private power corporations. . . ."¹²⁵ On the other hand, the Second Hoover Commission and the Task Force believe that regulation insures protection of the public interest. A study which seeks to establish the effect federal power development and marketing has had upon promoting the use of electricity and to estimate its impact upon the functioning of the power industry might help illuminate issues which are charged with much emotion.

In considering the third issue, the question of economic efficiency, one must begin with the physical and economic characteristics of hydroelectric power. Such power may be produced through "run-of-river" power plants, without impoundments; or it may be produced through reservoirs which concentrate the fall or "head" at one location, even out the supply of water for plant production through periods of low stream flow, and permit the retention of the energy potential in stored water when power is not needed. In general, initial investment costs for hydroelectric power are high compared with the investment costs for fuel-generating facilities, whereas operating and maintenance costs are lower. A major advantage of hydroelectric power based on reservoirs is that power can be turned off and on almost instantaneously without energy loss, whereas fuel-generating facilities require a fairly extensive period for heating of boilers. This makes hydroelectric power particularly valuable for stand-by purposes to meet emergency situations and to handle peak loads in energy demand.

The costs of potential hydroelectric power in a given stream can be minimized (a) by including power as one purpose in a multiple-purpose reservoir, and (b) by designing a system of reservoirs in a river basin to operate in coordination with one another in such a manner as to maximize the amount of power which can be produced from a given stream. It should be emphasized that the other purposes of a multiple-purpose system involve nonmarketable benefits, such as flood control, recreation opportunities, etc. Also, it is significant that important power benefits from a given reservoir may stem from the production of power at another downstream power site.

In short, economic efficiency dictates that (a) except where falling water is the primary source of energy, it should be so integrated with fuel-generating facilities as to serve the requirements of emergency and peak-load demands; (b) hydroelectric

¹²⁵ 1 COOKE COMM'N REPORT 228.

power be produced through multiple-purpose projects; and (c) projects be designed for coordinated operation in a system which will maximize use of available water supplies in power production, subject to limitations imposed by other purposes.¹²⁶ The TVA system probably comes closer than any other to meeting these requirements at the present time. However, the TVA approach involves large-scale federal investment in fuel-generating facilities, and it is doubtful whether such extensive federal investment can be expected in other areas. One alternative might be the "partnership" concept. A second alternative is the "giant power" concept advocated by Leland Olds, former Chairman of the Federal Power Commission.¹²⁷ Other alternatives may warrant consideration.

In seeking a resolution of the power controversy, the policy-maker is confronted with the task of reconciling economic and noneconomic objectives. His task is one of securing acceptance of an institutional arrangement whereby the economies of system operation of multiple-purpose projects having nonmarketable benefits can be integrated with fuel-generating facilities, while attaining the social objectives which a democratic society decides should be a product of federal water resources development.

V

MUNICIPAL AND INDUSTRIAL WATER SUPPLY

As water use for all purposes increases, it is often found that municipal and industrial needs can be fulfilled most economically through multiple-purpose storage reservoirs. Since the federal government has assumed a major role in the construction of such reservoirs, the demand is growing for federal consideration of municipal and industrial water supply needs in making river basin plans. It is widely accepted that municipal and industrial water use will grow rapidly in the years ahead. Three of the study group reports,¹²⁸ projections of needs by federal agencies, and other estimates confirm this conclusion. The prospective growth in demand and the attention being given these needs by federal agencies indicate that national water resources policy must take into account this phase of water resources development.

A. Objective of Municipal and Industrial Water Supply Development

For the most part, there has been little debate about the objectives of municipal and industrial water supply development; the generally-accepted goal is the provision of supplies to meet immediate and future needs of cities and industries. Nevertheless, one finds occasional reference to the development of such supplies in advance of demand as a means of stimulating industrial growth in a particular area. This was, of course, an important consideration in the development of supplies for

¹²⁶ The foregoing statement is based upon JOHN V. KRUTILLA AND OTTO ECKSTEIN, *MULTIPLE PURPOSE RIVER DEVELOPMENT: STUDIES IN APPLIED ECONOMIC ANALYSIS* (to be published).

¹²⁷ See testimony of Leland Olds in *Hearings before a Subcommittee of the Committee on Interstate and Foreign Commerce of the Senate on S. 2643*, 84th Cong., 2d Sess. 317-47 (1956).

¹²⁸ 1 COOKE COMM'N REPORT 184, SECOND HOOVER COMM'N REPORT 5, and the ADVISORY COMM. REPORT 5.

Los Angeles. However, until recently this has not been an issue of federal water resources policy.

The issues considered herein are as follows:

1. What part should the federal government play in estimating needs, preparing plans and constructing facilities to meet those needs?
2. To what extent should the federal government bear costs allocated to municipal and industrial water supply?

B. Federal Responsibility for Municipal and Industrial Water Supply Development

1. *Present Practice*

Existing federal policy on this issue is in a state of flux. Basic reclamation law¹²⁹ and flood control legislation¹³⁰ permit the inclusion of municipal and industrial water supply storage in federal reservoirs, provided that such an arrangement does not interfere with the other recognized federal purposes of the projects, such as flood control, navigation, and irrigation. However, the present trend is away from these limitations. The Hope-Aiken Act permits inclusion of municipal and industrial water supply storage in projects constructed under that act without such a limitation. The act authorizing the Colorado River Storage Project makes specific exception to the limitations imposed by reclamation law.¹³¹ And the vetoed Omnibus Flood Control and Rivers and Harbors Act of 1956 sought to define policy applicable to municipal and industrial water supply storage in reservoirs constructed by the Corps of Engineers so as to lift the limitation in flood-control law.¹³²

In general, it has been the policy of the federal agencies to expect local interests to estimate demands for these purposes. Then, upon request, the federal agencies would provide the storage in multiple-purpose federal reservoirs. In recent years, however, both the Corps of Engineers and the Bureau of Reclamation have taken a growing interest in this phase of water resources development. On the Canadian River, in Texas, the Bureau of Reclamation projected demands and designed a reservoir and distribution system to serve a number of towns in the Panhandle area. At the present time, the Bureau is engaged in a large-scale planning program for the Gulf Coast area of Texas, where municipal and industrial water constitutes a major purpose of the system. In a number of other areas, too, the Bureau is estimating needs and formulating plans which recognize municipal and industrial water supply development as a principal objective of its work. At the same time, in most areas in the seventeen western states, the Bureau treats this activity as incidental to irrigation development. The situation in the Corps of Engineers is somewhat similar. In the Delaware River basin, the Corps is sponsoring studies of future demand for

¹²⁹ 41 STAT. 451 (1920) 43 U.S.C. §521 (1952).

¹³⁰ Flood Control Act of 1936, as amended, 50 STAT. 515 (1937), 61 STAT. 501 (1947), 33 U.S.C. §701h (1952).

¹³¹ Colorado River Storage Project Act, 70 STAT. 107, 43 U.S.C. §620c (Supp. III, 1956).

¹³² H.R. 12080, 84th Cong., 2d Sess. §206 (1956). The new omnibus bill, as it passed the Senate, would lift the limitations applicable to both the Corps of Engineers and the Bureau of Reclamation. See S. 497, 85th Cong., 1st Sess. §206 (1957).

municipal and industrial water, in recognition that this purpose constitutes a primary objective of water resources development in the area. Yet, throughout most of the country, it does not undertake such studies, and municipal and industrial water supply is treated as incidental to flood control, navigation, and other accepted federal functions.

Available information from the Department of Agriculture indicates that storage for these purposes is included in upstream reservoirs only when specifically requested by local interests and on the basis of the requirements as estimated by the local users.

2. Policy Recommended by Study Groups

The Cooke Commission,¹³³ the Second Hoover Commission,¹³⁴ and the Task Force¹³⁵ state specifically that the provision of municipal and industrial water supply should be a local responsibility. This also appears to be the view of the other two groups.¹³⁶ Nevertheless, all five reports recognize that the federal government cannot avoid some involvement in municipal and industrial water supply development. Thus, the Cooke Commission points out that "the growing needs of communities for water supply should . . . be considered in connection with the planning of all comprehensive basin programs."¹³⁷ Even the Task Force, which in general takes the narrowest view of federal responsibilities, recognizes that the federal government may supply water for such purposes ". . . as an incident to multiple purpose projects in which the Federal government participates primarily for flood control, navigation or irrigation."¹³⁸

C. Repayment of Municipal and Industrial Water Supply Development Costs

1. Present Practice

Existing law gives considerable latitude to the Secretary of the Army¹³⁹ and the Secretary of the Interior¹⁴⁰ in determining the amount of reimbursement for the cost of municipal and industrial water supply facilities built by the Corps of Engineers and the Bureau of Reclamation. But the Watershed Protection and Flood Prevention Act, as amended, provides for full reimbursement of municipal and industrial storage costs, including interest;¹⁴¹ and it is the stated policy of the federal agencies to require full repayment of such costs. For example, Budget Bureau Circular A-47 provides that ". . . the total financial costs to be allocated to this purpose will be fully reimbursed by the States, local governments, districts, or persons served."¹⁴² Discussions with agency officials confirm the view that this policy is generally applied in practice by the federal agencies. Yet, a change in this policy may be impending.

¹³³ I COOKE COMM'N REPORT 15.

¹³⁴ I SECOND HOOVER COMM'N REPORT 29.

¹³⁵ I TASK FORCE REPORT 224.

¹³⁶ See SURVEY COMM'N REPORT 16; ADVISORY COMM. REPORT 35.

¹³⁷ I COOKE COMM'N REPORT 15.

¹³⁸ I TASK FORCE REPORT 224.

¹³⁹ 50 STAT. 515 (1937), as amended, 61 STAT. 501 (1947); 33 U.S.C. §701h (1952).

¹⁴⁰ Reclamation Project Act of 1939, 53 STAT. 1193, as amended, 43 U.S.C. §485h(c) (1952).

¹⁴¹ 68 STAT. 667 (1954), as amended, 70 STAT. 1088, 1090, 16 U.S.C. §1004(2), 1006a (Supp. III, 1956).

¹⁴² U. S. Bureau of the Budget, Circular A-47, dated Dec. 31, 1952.

First, there are instances where the federal government has provided "low-flow regulation" without cost to the beneficiaries. In some cases, the principal beneficiaries are the towns downstream from the regulating reservoirs, which have thereby a stable source of water supply available in the regulated stream flow. An example is Fall River Reservoir, on a tributary of the Verdigris River, in Kansas. This reservoir was authorized for flood control and low-flow regulation on a nonreimbursable basis. The actual purpose which the reservoir serves is illustrated by a statement in a recent report of the U. S. Geological Survey, as follows:¹⁴³

Fall River Reservoir *that supplies towns on Fall River* is expected to be empty by April unless there is substantial relief. (Italics supplied.)

The vetoed Omnibus Flood Control and Rivers and Harbors Bill of 1956 would also have authorized low-flow regulation on a nonreimbursable basis;¹⁴⁴ and General Itschner, the Chief of Engineers, has stated that he expects the 85th Congress to enact such legislation.¹⁴⁵ If the Fall River pattern should result, the federal government would, in effect, be providing municipal and industrial water on a nonreimbursable basis.

A second facet of this problem relates to the financing of municipal and industrial water supply costs before demand has materialized or local interests are in a position to bear such costs. The vetoed Omnibus Flood Control and Rivers and Harbors Bill of 1956 would have authorized a system of projects in Oklahoma and Arkansas justified, in large measure, on the basis of water supply benefits.¹⁴⁶ However, the demand for the water supply has not materialized. If these projects are authorized and built, would the interest on the construction investment which would accumulate while demand was developing be a charge against the eventual water users, or would this be a cost to the federal government? Also, if the demand never materializes, would the federal government bear the total cost?

2. Policy Recommended by Study Groups

The five study group reports do not analyze the aspects of reimbursement policy discussed above. However, with the exception of the Second Hoover Commission, which omits discussion of the issue, they agree that the full costs allocated to municipal and industrial water, including interest on the investment, should be borne by local public or private interests.¹⁴⁷

¹⁴³ U. S. Geological Survey, Dep't of the Interior, Water Resources Review. Dec. 1956, p. 2.

¹⁴⁴ H.R. 12080, 84th Cong., 2d Sess. §205 (1956).

¹⁴⁵ Remarks by Major General Itschner, Chief of Engineers, U. S. Army, before the Arkansas Basin Development Association, at Sequoyah State Park, Oklahoma, Oct. 29, 1956. Such a provision is included in the new omnibus bill which has passed the Senate. See S. 497, 85th Cong., 1st Sess. §205 (1957).

¹⁴⁶ H.R. 12080, 84th Cong., 2d Sess. §203 (1956). These are the seven reservoirs above Millwood Reservoir on Little River referred to in this bill. S. 497, 85th Cong., 1st Sess. (1957) would also authorize these reservoirs.

¹⁴⁷ See 1 COOKE COMM'N REPORT 12-13; SURVEY COMM'N REPORT 16; 1 TASK FORCE REPORT 224; ADVISORY COMM. REPORT 31.

D. Municipal and Industrial Water Supply Policy Issues

The municipal and industrial water supply function casts in sharp relief the policy issues involved in dealing with those aspects of water resources development which traditionally are local, state, and private responsibilities. Economic efficiency in water resources development requires that municipal and industrial needs be taken into account in the design of river basin systems. Assuming this premise, should federal agencies estimate future requirements, or should construction plans be based upon the estimates of local public and private interests? If the latter course is strictly followed, it must be recognized that occasions will arise when local bodies will be either uninterested or unequipped to make sound estimates. If the federal government estimates the demand and appraises the value of supplies provided, it must examine alternate sources of supply, appraise other possible demands upon those supplies, and estimate costs of delivery from possible sources of supply to the city or industry. In short, the federal government will be as deeply involved in municipal and industrial water supply as it is in irrigation and flood control.

A closely related question is posed by the possible federal role in the construction of canals and pipelines from the source of supply to the city or industry. Economic efficiency in water resources development does not necessitate federal participation in this activity. However, cities report difficulty in financing public works, and federal financing is a convenient alternative. Thus, the Housing and Home Finance Administrator is authorized to loan funds for planning public works, including municipal and industrial water supplies, and it is also authorized to loan funds, with priority to small communities, to construct such facilities.¹⁴⁸ A number of projects planned by the Bureau of Reclamation also have raised the question of whether the Bureau should build the delivery facilities as well as the storage.¹⁴⁹ Finally, Senator Lyndon Johnson has introduced legislation which would authorize the federal government, through the Corps of Engineers, to make loans to finance municipal and industrial water delivery facilities.¹⁵⁰ Accordingly, the federal government is moving in the direction of a more active role in this traditionally local activity, in part because economic efficiency requires that all water supply needs be taken into account in multiple-purpose planning, but also because of the difficulties (whether real or assumed) confronting local units of government in financing such development.

The third question is that of repayment of costs. Will municipal and industrial water supply development be added to the list of federally-subsidized water resources development functions? If low-flow regulation is provided on a nonreimbursable basis, it will be difficult to avoid such a policy. What would be the rationale for such subsidies, and how would they be administered by the various water resources development agencies so as to assure a consistent policy among them?

¹⁴⁸ 69 STAT. 643 (1955), 42 U.S.C. §1492 (Supp. III, 1956).

¹⁴⁹ *E.g.*, the Canadian River Project.

¹⁵⁰ S. 1190, 85th Cong., 1st Sess. (1957).

In brief, it appears that the federal government is entering in a substantial way the municipal and industrial water supply field, an activity traditionally considered to be a state and local responsibility. The ramifications of such action and the policy issues involved have not been examined by the five study groups. It is a field of vital concern to every community, every water-using industry, and the general economy. The issues should receive careful attention from policy-makers before precedents are established which are difficult to overcome.

VI

CONCLUDING OBSERVATIONS

The relatively small area of disagreement among the study groups on the major water resources policy issues considered in this analysis is impressive. The only sharp differences which have been identified lie in the power field. In this area, the cleavage among the study groups is so great and so long-standing that the possibilities for reconciliation do not appear promising. For the other policies analyzed in this paper, the differences identified are, for the most part, differences of detail rather than of principle. However, it is also pertinent to observe that all study groups did not express themselves on each issue. Furthermore, there are some pronounced differences in emphasis and basic concepts, such as the obvious objective of the Task Force to minimize federal participation in the conduct and financing of water resources activities. Nevertheless, when the specific recommendations are analyzed as they apply to flood management, irrigation, and municipal and industrial water supply, they all visualize approximately the same general objectives and the same federal role in the conduct of these functions.¹⁵¹

In considering the foregoing observation, however, one should not minimize the extent of the gulf between the reports of the Cooke Commission and the Survey Commission, on the one hand, and the Hoover Commission and its Task Force, on the other. The differences over power, which are the most clearly defined, are of major significance, because power is an important purpose of most multiple-purpose water resources development systems. To the extent that hydroelectric power development is stymied because of the controversy as to how it should be undertaken, water resources development for other purposes is adversely affected.

There is also one other difference among the reports which is more difficult to define but is, nevertheless, an important one. The Cooke Commission, in particular, visualizes the national water resources development program as a positive, dynamic force in the economic growth of the country, a view which does not appear to be shared to the same extent by the Advisory Committee, the Second Hoover Commission, and the Task Force. This difference is reflected best in the treatment of water

¹⁵¹ Craine suggests that "apparently the Presidential Advisory Committee focused its major attention on sifting out those things which were acceptable from such earlier studies as the first Hoover Commission report (1949), the President's Water Resources Policy Commission report (1950), and the Report of the Missouri Basin Survey Commission (1953)." Craine, *Natural Resources and Government*, 16 PUB. ADMIN. REV. 212, 215 (1956).

resources development as a stimulus to regional growth. In supporting the position that regional development is an important objective of the national water resources program, the Cooke Commission makes the following significant statement:¹⁵²

... a new regionalism began to develop as an economic revolt against the centralization of industrial and commercial wealth in the older Northern States. It was directed at the tendency to restrict the new regions to a semi-colonial, low per capita income, raw material producing status. The revolt struck at all the institutional arrangements which tended to perpetuate this centralization. Particularly it found in the river basin program a means of developing better balanced rural-industrial economies, which would increase opportunity, hold population and raise general income levels.

Although the Second Hoover Commission and the Advisory Committee take cognizance of the impact water resources development has had upon regional growth, the concept of national water resources development as a dynamic force in the economy is lacking. This difference would have an important bearing upon the kind and magnitude of the national water resources development program.

Nevertheless, in view of the relatively large area of agreement among the study groups, it would seem reasonable to expect an early resolution of many of the issues. But this does not appear to be the case, for a number of reasons. First, important recent trends are contrary to the policies recommended. This is most notable in the area of cost-sharing. The five study groups have recommended that state and local interests bear a greater share of the cost of water resources development. However, recent legislation has moved in the opposite direction. The amendments to the Hope-Aiken Act provide that construction costs for flood-control facilities built under the provisions of the act will be fully nonreimbursable. Flood-damage insurance is to be subsidized. Federal grants are being made to finance the construction of pollution-abatement facilities.¹⁵³ And subsidies for irrigation in the thirty-one eastern states, as well as the seventeen western states, are permitted by the amended Hope-Aiken Act. Thus, in spite of much sentiment to the contrary, the long-established trend toward greater federal subsidies for water resources development continues.¹⁵⁴

Another reason that the water resources policy issues are far from resolution is that they are constantly changing. Although some of the issues have remained the same for many years, important new ones continue to emerge. Many issues which are prominent today were not considered, or were superficially treated, by the study groups. For example, flood-damage insurance receives little attention in the five reports. The issues raised by federal participation in humid-land irrigation are scarcely considered. The rapidly increasing demands for outdoor recreation facilities and municipal and industrial water supplies, the growing seriousness of stream pollution, and the impact of new technology on power development and water use

¹⁵² I COOKE COMM'N REPORT 4.

¹⁵³ Water Pollution Control Act, 62 STAT. 1158 (1948), as amended, 33 U.S.C. §466d (Supp. III, 1956).

¹⁵⁴ This appears to be contrary to Temple's conclusion that "increased local financial responsibility will be a characteristic of emerging policy." Temple, *Our Evolving National Water Policy*, American Forests, Sept. 1956, pp. 34, 41.

have changed the character and significance of the water resources policy issues associated with these activities. As a consequence, the study group reports are, to some extent, already out of date. This may be attributed in part to the failure of the study groups to consider some of the important issues; but, in part at least, it stems from changed conditions which were not evident until very recently.

Finally, this review suggests that the study group reports do not clarify the objectives of the national water resources development program. The reports recognize and accept economic and social goals, but they fail to define the extent to which economic efficiency and noneconomic considerations should be the basis for determining the kind and magnitude of the water program. Major reliance is placed upon the benefit-cost analysis, which, if properly made, reflects the economic efficiency of the project, but does not take into account social and human values.¹⁵⁵ Yet, a review of existing practice and events leading to federal action in the water resources field clearly demonstrates that certain social objectives were paramount concerns in deciding what the federal role should be. Thus, much of the flood-control legislation was enacted to prevent human suffering stemming from flood disasters; reclamation programs were designed to provide family-farm settlement opportunities; and power was to be marketed to foster the widespread use of electricity.¹⁵⁶ Such goals were and continue to be important because the nature of the federal government's role in the water resources field is determined by the interaction of political forces which reflect social and human values and local and group economic problems, as well as national economic needs. And the matter is further complicated by the fact that projects may receive political support for quite different reasons. Thus, some supporters may have broad humanitarian objectives, while others may be interested only in the direct benefits that will accrue to them. Possibly, then, it is too much to ask that policy objectives be explicitly stated. Nevertheless, if one assumes that policy should reflect the popular will, the first task of the policy-maker is to express what the people wish to accomplish. However, this review seems to indicate that despite much attention and study of water resources policy, the nation remains divided or unclear as to what it is seeking to attain through many of its water resources development programs.

In summary, then, it is evident that although there is much agreement, a stable and consistent national water resources policy is far from attainment. The dynamic nature of the problem and the continuing inability of the Executive and the Congress to establish clearly defined and acceptable objectives suggest that water resources policy issues will remain a subject of debate and controversy for some time to come.

This review also suggests several basic problems inherent in the establishment and administration of national water resources policy. First, it points up the growing

¹⁵⁵ The Cooke Commission gives greater weight to noneconomic considerations than the other four reports.

¹⁵⁶ There is a question of the extent these factors actually motivated federal action, since other factors also played an important part. Nevertheless, federal action was justified to the public, in large measure, on the basis of objectives such as these.

complexity of the water resources policy field. The number of issues which have been cited, the ramifications of each, the somewhat differing views expressed, and the physical, economic, and political information essential to an understanding of the issues underscore the difficulties confronting the policy-maker. The layman who wishes to understand and express himself intelligently upon them faces an even more formidable task, because of the background of information required and the conflicting views which he hears. Under these circumstances, the strength of the special-interest group is enhanced, and the difficulties of the conscientious legislator and administrator in establishing wise policies are increased. Thus, the role of citizen groups and educational and research institutions becomes more important in the attainment of prudent water resources policies.

Second, water resources policy formulation is difficult because it is not just one field of activity; in reality, it is composed of segments of many fields. Since water resources development encompasses navigation, national water resources policy is inextricably intertwined with national transportation policy. Since water resources are important in outdoor recreation, water resources policy is involved in the national recreation policy. Water resources development is also intimately concerned with fish and game, the production of power, public health, the production of food and fibre, and the welfare of farmers. Separate federal programs have been developed for each of these fields. Each is governed by its own set of policies, and each involves special political and economic interests. Water resources policy cuts across all of them, and the policy-maker is confronted with the task of evolving a policy which is valid as it applies to each field as well as to water resources. Many questions, accordingly, arise: Water resources development can increase agricultural production and provide farm settlement opportunities; but in terms of the total federal agricultural program, does water resources development constitute the best means of supplying future requirements for food and fiber? Water resources development may offer the opportunity to provide navigation facilities; but in terms of the national transportation program, is this the best means of meeting an area's transportation needs? Water resources development may offer an opportunity to provide recreation facilities; but in view of national or area recreation needs, does this constitute the best investment of recreation development funds? Problems such as these give an unusual scope and complexity to water resources policy and the administration of water resources development programs.

Third, water resources policy poses serious problems in intergovernmental relationships. The federal government, because of its superior financial resources, has become active in many fields traditionally considered to be local and state responsibilities. In the field of water resources development, however, certain inherent characteristics of the activity have made it even more difficult for the federal government to avoid assumption of responsibility. Thus, economic efficiency frequently requires that water resources development projects be designed for system operation. But since streams flow across state lines, such systems exceed the jurisdiction of

localities and states; and in as much as special interstate institutions have been difficult to establish, the federal government has offered a logical alternative. This factor, combined with certain constitutional obligations and the superior financial resources of the federal government to meet the large investment requirements of water resources development, has, accordingly, deeply involved the federal government in the water resources field. Since economic efficiency also dictates that water resources development be multiple-purpose in nature, such activities as municipal and industrial water supply, recreation, and pollution abatement, which are normally considered to be state, local, and private responsibilities, must be taken into account in planning federally-sponsored water resources facilities. When a federal agency plans an irrigation project, therefore, it cannot, in the public interest, avoid becoming involved in these activities, too, which are assumed to be nonfederal responsibilities. In short, since water resources development is interstate and multiple-purpose in character, efficiency will not permit a sharp division between federal activities and what has normally been considered state-local-private activities.

The problem is well illustrated by the analysis of the policy issues applicable to municipal and industrial water supply. A similar problem is faced in pollution-abatement, recreation, and fish and wildlife activities. If one assumes that there is merit in continuing to rely primarily upon state, local, and private agencies to conduct these governmental activities, the task for the national policy-maker is to make it possible for the responsibility to be nonfederal, while permitting the state, local, or private entity to avail itself of the economies of multiple-purpose, interstate stream development.

Finally, one is impressed by the burden of responsibility being placed upon federal administrators as a consequence of increased federal subsidization of water resources development. Navigation and flood-control costs are borne almost entirely by the federal government. It is expected that low-flow regulation costs will also be nonreimbursable. Western irrigation, too, involves large-scale subsidies, and some subsidization of eastern irrigation and drainage is permitted by the Hope-Aiken Act. And legislation is pending which would permit substantial allocations of costs to recreation on a nonreimbursable basis.¹⁵⁷ This increased subsidization of water resources development by the federal government raises two issues—namely: (1) Is it appropriate to subsidize, to such a great extent, the direct beneficiaries of water resources development projects at the expense of the general taxpayer? and (2) Can efficiency in water resources development be attained when the direct beneficiaries pay such a small share of the cost? The first issue is a question of equity, and the approach to it is clearly marked. In a democratic society, if the general public, with full knowledge of what it is doing, supports a given action, it is an action to be accepted. The second issue, however, raises a somewhat different question. Theoretically, it is possible to achieve efficiency in attainment of water resources development objectives, even though the federal government bears all the cost. By

¹⁵⁷ See S. 1164, 85th Cong., 1st Sess. §4 (1957).

comparing the estimated accomplishments with the costs in an objective manner, efficient projects can be designed and developed. But are our institutions capable of achieving this goal when many benefits are local and specific, when the task of analysis is so complex, and when responsibility for bearing the cost is diffused over the entire population instead of borne by those who benefit directly?

Much of the burden for meeting this problem rests upon the engineers, scientists, economists, and administrators who plan the projects. Their position merits consideration. First, their tools are, in many ways, inadequate to the task. Estimates of the physical and economic effect of a project depend, in large measure, upon judgment, instead of being calculable with mathematical precision. Many of the values with which they must deal cannot even be expressed in monetary terms, and many that can are subject to a wide margin of error. Second, in rendering the judgments essential to designing and evaluating a project, the analyst is subject to enormous pressures to produce the "right" answer. Special-interest groups may want the project; congressmen may be supporting it; the "interest" of his agency may be served by finding the project justified. Support for the project is sharply focused, because many individuals can identify themselves with the benefits from the project. But, unless other interests are adversely affected, there is little in the way of a counter-force, except the analyst's judgment, because the costs are diffused, and those who benefit have little in the way of costs to offset against the obvious benefits. The burden upon him is great. Operating under such pressures and with so much depending upon his judgment, is it fair to the civil servant to expect him to produce an objective result which best serves the interest of all of the people? This situation gives a special urgency to increasing the precision of the engineering, scientific, and economic analysis involved in designing and evaluating water resources projects. Also, if the public interest is to be served, it places a heavy responsibility upon the public officials and the groups directly interested in a given project to define the objectives of the project clearly and appraise objectively its prospective accomplishments.

CRISIS, COMMUNITY, AND CONSENT IN WATER POLITICS*

HENRY C. HART†

This is a time, as this symposium shows, when many of us can be drawn into a re-examination of our approach to the government of water resources. To a remarkable degree, there is agreement that present law and administration are defective. Among authoritative commission reports, moreover, there is considerable agreement upon the basic nature of the defects. These criticisms go to the heart of our constitutional system: to the principles that executive and legislative powers be not combined in the same hands, and that the United States concern itself with national affairs, reserving more limited concerns to the states.

Out of this accord have grown the following current recommendations—and even here, there is agreement on the first and second, and controversy only on the third: First, the President must gain the power over federal water resources developments that he has over other federal programs, especially the power to make proposals to Congress and the public on behalf of the executive branch. Second, the states and local government units, in so far as they are able, must carry the cost of water resources developments that have state or local consequences, and they must share correspondingly in policy-making. We know, third, that controlling and using the water in each drainage basin must be given unified direction, though we have not quite determined whether the direction should be departmental or regionally semi-autonomous.

The self-scrutinizing mood stems not from this minor difference, however, but rather from the stubborn fact that such thorough and influential agreement has produced only trifling and peripheral action. The justification for some sense of frustration can be put with simple force by reading a few words from an earlier analysis:¹

Inquiry into the condition of the Mississippi and its principal tributaries reveals very many instances of the utter waste caused by the methods which have hitherto obtained for the so-called "improvement" of navigation. . . .

Such short-sighted, vacillating, and futile methods are accompanied by decreasing water-borne commerce and increasing traffic congestion on land, by increasing floods, and by the waste of public money. The remedy lies in abandoning the methods which have

* The author is indebted to Professor John M. Gaus, of Harvard University, for some of the ideas expressed in this article.

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¹ THEODORE ROOSEVELT, *Eighth Annual Message to Congress*, in 17 *THE WORKS OF THEODORE ROOSEVELT* 616-17 (Memorial ed. 1925).

so signally failed and adopting new ones in keeping with the needs and demands of our people.

In a report on a measure introduced at the first session of the present Congress, the Secretary of War said: "The chief defect in the methods hitherto pursued lies in the absence of executive authority for originating comprehensive plans covering the country or natural divisions thereof." In this opinion I heartily concur. . . . The military engineers have undoubtedly done efficient work in actual construction, but they are necessarily unsuited by their training and traditions to take the broad view, and to gather and transmit to the Congress the commercial and industrial information and forecasts upon which waterway improvement must always so largely rest. Furthermore, they have failed to grasp the great underlying fact that every stream is a unit from its source to its mouth, and that all its uses are interdependent. . . . A physician who disbelieved in vaccination would not be the right man to handle an epidemic of smallpox.

When one realizes that the source of this forthright indictment was the President, and the date 1908, one is entitled to a pessimistic view of the value of seeking change by calling attention to the defects.

Since 1950, however, we have begun to get help in understanding the reasons underlying the frustration of reform. Arthur Maass has made the principal contribution.² Such proposals as that of the first Hoover Commission, he points out, confront not merely error, but entrenched political power. The Corps of Engineers looks for authoritative instructions to the Public Works Committees and Appropriations Subcommittees of the House of Representatives and Senate, which interlock with powerful pressure groups—"the lobby that can't be licked." By comparison, it has but a formal responsibility to the President, whose very authority to reorganize the executive branch has, indeed, been conditioned by Congress upon the perpetuation of this congressional dominion over rivers and harbors. Professor Maass further observes that it is the President who has sought executive unity and broadly-oriented planning, and the vested congressional interest in direct access to local public works that has constituted the stumbling block.³

This situation may disconcert proponents of reform, since a tug of war between President and Congress promises further deadlock; but like all worth-while hypotheses, it provokes further questions. The first is the comparative one: Why, in as much as Congress has empowered the President or executive departments to select localized works for investment of federal funds (*e.g.*, military installations, highways, hospitals, schools, and airports), should it have established so firm a hold on the civil works of the Army? The second is the differential one: In what circumstances has Congress, in fact, been willing to empower and support executive planning of water resources developments, and in what circumstances not?

These questions, together with a further curiosity as to the reasons why progress comes at so glacial a pace, make it worth while to examine both the method of deciding upon projects and the aggradation of power of the Corps of Engineers—not

² See Maass, *Congress and Water Resources*, 44 AM. POL. SCI. REV. 576 (1950); and ARTHUR MAASS, *MUDDY WATERS: THE ARMY ENGINEERS AND THE NATION'S RIVERS* (1951).

³ ARTHUR MAASS, *MUDDY WATERS: THE ARMY ENGINEERS AND THE NATION'S RIVERS* 122 (1951).

as questions of the responsibility of an executive agency to the President or Congress, but rather as questions of the accumulation and focusing of political power out of common (although, of course, differently manifested) constituencies. The task would be foolhardy, of course, had we not lately acquired, from a host of researches in other fields of policy-making, provocative concepts of opinion formation; the locale and motivation as well as the official alliances of pressure groups; the variety of types of power which members of Congress, including committee chairmen, want and wield; the timing of the legislative process; and the effect of the different roles of the agencies, the Budget Bureau, and the President upon political decisions. Present knowledge brings us, in short, to the point where we can intelligently ask questions about the process as well as the structure of government decisions.

Such an inquiry requires information on policy-making in its social context—not merely as interplay among bureaus, the White House, and Capitol Hill. Such studies are still rare, but we have them for rivers and projects of some diversity: the lower Mississippi, Columbia, Connecticut, Central Valley of California, Lower Colorado of Texas, Missouri, and (on certain phases) Tennessee Rivers.⁴ These are all, in some degree, political analyses. We have, in addition, descriptive accounts of the genesis of other river projects, including the Miami Conservancy District and Hoover Dam.⁵

I

HYPOTHESES CONCERNING PUBLIC INTEREST IN WATER RESOURCES DEVELOPMENT

A. Within a drainage basin, *intensity* of public interest tends to vary directly with:

1. The physical and economic capacity of the drainage itself to serve the basin population at its established level of technology. Reliable water supply for domestic, industrial, or irrigation use; hydroelectric capacity; and a navigable waterway increase this capacity to the extent that they can be used and are needed. The basin's capacity is measured against the size of the drainage area.
2. The flood damage inflicted. This is a product of the height, duration, and frequency of floods, and the value of human occupancy of the vulnerable floodplain.
3. The conscious participation of the population in the control or utilization of the basin's water resources. Near the positive extreme would be watershed associations (most of whose farmer-members conduct water-conserving farm operations), irrigation districts (to the extent that their participation comprehends the

⁴ See ARTHUR D. FRANK, *THE DEVELOPMENT OF THE FEDERAL PROGRAM OF FLOOD CONTROL ON THE MISSISSIPPI RIVER* (Columbia University Studies in History, Economics, and Public Law No. 323, 1930); CHARLES MCKINLEY, *UNCLE SAM IN THE PACIFIC NORTHWEST* (1952); WILLIAM E. LEUCHTENBURG, *FLOOD CONTROL POLITICS, THE CONNECTICUT RIVER VALLEY PROBLEM, 1927-1950* (1953); MARY MONTGOMERY AND MARION CLAWSON, *HISTORY OF LEGISLATION AND POLICY FORMATION OF THE CENTRAL VALLEY PROJECT* (1946); CORNER CLAY, *The Lower Colorado River Authority*, in EMMETTE S. REDFORD (Ed.), *PUBLIC ADMINISTRATION AND POLICY FORMATION* 191 (1956); HENRY C. HART, *THE DARK MISSOURI* (1957); MARION E. RIDGEWAY, *THE MISSOURI BASIN'S PICK-SLOAN PLAN: A CASE STUDY IN CONGRESSIONAL POLICY DETERMINATION* (ILLINOIS STUDIES IN THE SOCIAL SCIENCES No. 35, 1955); C. HERMAN PRITCHETT, *THE TENNESSEE VALLEY AUTHORITY: A STUDY IN PUBLIC ADMINISTRATION* (1943); JUDSON KING, *THE LEGISLATIVE HISTORY OF MUSCLE SHOALS* (1936).

⁵ See ARTHUR E. MORGAN, *THE MIAMI CONSERVANCY DISTRICT* (1951); C. A. DYKSTRA (Ed.), *COLORADO RIVER DEVELOPMENT AND RELATED PROBLEMS*, 148 ANNALS pt. 2 (1930).

storage and control of the water, as well as its use on farms), and hydroelectric distribution systems operated by members or municipalities (subject to the same proviso). Note the importance of reimbursement or financial support by beneficiaries as a criterion of conscious participation.

B. *Commonness* of public interest concerning water resources development on the part of the population living in a drainage basin tends to vary directly with:

1. Intensity of public interest, as influenced by the factors in A. *supra*.
2. General social cohesion of the basin population. A basin centering on a city and roughly coterminous with its hinterland approximates the positive extreme.
3. Social cohesion between the communities or groups benefited by the development and the communities or groups dislocated or burdened. The large storage reservoir dislocating communities far upstream of its flood control, navigation, irrigation, or water supply benefits is an unfavorable case; so is diversion of water from a drainage in which it is inadequate to meet all needs.
4. The degree to which use of a water resource by one group or community facilitates use by another—e.g., construction of navigation facilities on a common waterway or exploitation of hydroelectricity where unit costs decline with volume. By contrast, community of interest is inhibited where water uses are mutually exclusive—e.g., consumption of a scarce supply by irrigation or pollution of a stream so as to render it unfit for other uses below.

C. The degree of interest in water resources development maintained by the general political constituency or public of any unit of government tends to vary with:

1. The conformity of boundaries of the unit to the drainage area or portion of the basin system which is under control. A drainage all significant parts of which are in one state and which occupies much of the state's territory (e.g., the Central Valley of California) represents the positive extreme; a small intercity or inter-county drainage in a state or a small interstate drainage in the United States approximates the negative extreme.
2. The relative importance of purposes served by the development among the purposes of the unit of government. This factor is, of course, relative to the capacity of the drainage as in A. *supra*.

Such a schematic outline of hypotheses can have meaning only as a basis for comparing particular basins and projects. Even so, some trends with regard to the relationship of its factors have been characteristic enough of the United States as a whole to be mentioned in general terms.

Most formative has been the introduction of the large multiple-purpose storage reservoir. It so dramatically increased drainage capacities for economic use (A. 1.) as to bring the whole problem into national prominence in a mere decade (1935-45), featuring the completion of Hoover, Norris, Fontana, Shasta, Friant, Bonneville, Grand Coulee, Fort Peck, Tygart, Denison, and Marshall Ford Dams. But it has

characteristically to be located a great distance, generally hundreds of miles, above the incidence of its major benefits, which have reached perhaps overlapping, but never coterminous, areas (power to farms and cities around the dam, without regard to drainage lines; irrigation to farm land way from the drainage below; and navigation and flood control to cities on the drainage below). The very engineering scope and variety of economic benefits which have captured attention, before, have also strained the commonness of interest of the vastly enlarged populations affected (B. 2., B. 3.).

Let us examine the meaning of this trend for the governmental factor (C. 1.). Political units (nations, states, counties, and cities) bear only the most coincidental relation to basin units. As long as the minimum segment of the basin for engineering treatment was small, projects could be parceled among county levee and drainage districts, municipal water supply systems, and hydroelectric plants, thus fitting existing governmental boundaries. The big reservoirs to control whole basins, however, have raised a new problem: The dilemma is whether to (a) create a special governmental district fitting the basin (either by joining of the units comprising parts of the basin or by subdivision of a unit comprehending it all); or (b) handle water resources development as a part of the normal legislative and administrative tasks of a unit of government necessarily much larger than the basin involved. There are obvious constitutional and political reasons why solution (a) has been employed more within states, and solution (b) more among states. But, quite apart from the considerations of relative fiscal capacity, constitutional powers, and technical and managerial abilities, which happened to operate in behalf of federal assumption of water resources development responsibilities in the very decade of the 1930's when engineering techniques were being enlarged, we can detect a more intrinsic cause for gravitation of decisions to the larger government unit. It is the tendency we have noted for the scope of engineering and economic uses to reach beyond the capacity of affected populations to identify their common interests. But, of course, the assumption of water resources development duties by a government unit so very much larger than each basin concerned, as is the United States, raises to critical prominence factor C. 2. How can the American public be seriously interested in the development of even such a great river as the Columbia or the Missouri, much less the Tennessee?

At this point, we reach the particular question of public interest which this article explores. It arises from the two essentially different types of consequences which a drainage may have for the people in its basin. One type has to be foreseen and planned for; it requires work not only of engineering, but investment and economic organization; it can arise, in short, only from deliberate decisions of the people. The capacity of a drainage to create consequences of this type we have outlined as variable A. 1. But a drainage may also affect people, and drastically, without their intent—indeed, because of their lack of foreknowledge. This is the flood capacity (A. 2.).

As long as floodplain occupancy was generally agricultural, or of modest value,

the consequences of floods were serious only where they occurred often. And as long as flood-control engineering was local (levees), floods might be episodic, but flood control was perennial and participative (A. 3.), not unlike irrigation or distribution of electricity; people often carried on, and always paid for, their own flood-control programs. The large multiple-purpose storage reservoir, however, has changed things. It has raised the possibility, at least, of nonparticipative flood control. In capturing hydroelectricity as a paying partner, it has enhanced opportunities for organizing a participating public; but by storing floods far from the site of the flood risk and using them for paying purposes, it has raised the possibility that people may get flood protection without organizing or financing it, save through their federal taxes. Couple this with the simultaneous trend toward assumption of water resources development responsibility by the United States, so much larger than the basins developed, and we have the ingredients of the particular hypothesis explored in this article. In our list of hypotheses, it stands as an alternative to factor C. 2.:

As water resources development decisions come onto the agenda of a government unit whose constituency has little participation in the development, public interest will be found in the contribution of the development to important purposes of the government or (alternatively) in the gravity of the crises which floods create in the absence of participative controls.

II

THE LEGISLATIVE RECORD

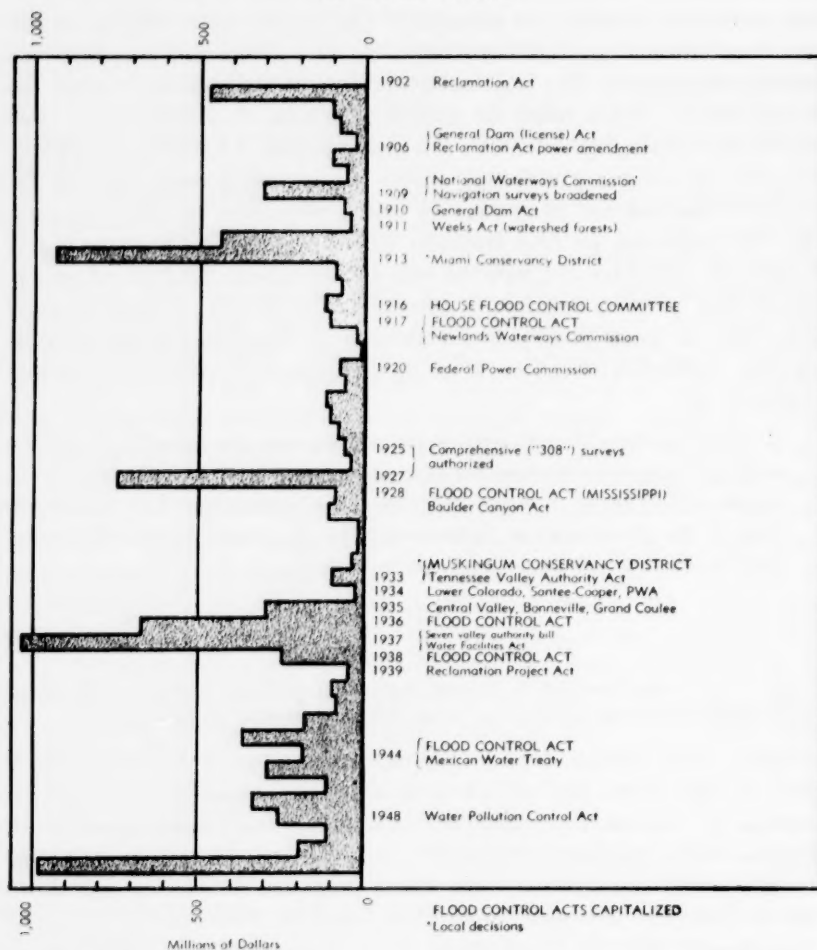
National catastrophes have led to insistent demands for national action, and the timing of the legislative process has been set by the tempo of destructive floods.⁶

Such a hypothesis can be taken as an adequate segment of the organization of our knowledge in this field only in so far as it gives meaning to the experiences investigated by various researchers. We can, however, immediately submit it to a rough-and-ready test: Does it explain the actual decisions for and against policies within the area of its purview—viz. federal adaptation to complex or multiple-purpose water resources control possibilities during the period since crisis-oriented programs came onto the federal agenda (roughly, this century)? The President's Water Resources Policy Commission has left us with a convenient abstract of the principal federal policy decisions on questions of comprehensive water resources development in its volume *Water Resources Law*,⁷ and we shall deal with all acts and resolutions of Congress 1903-50 headnoted there. To test circumstantially whether they were reactions to crisis situations, let us collate them with the graph of annual nation-wide flood damage (adjusted to 1950-51 dollars and to the 1950-51 value of property exposed to risk).

⁶ GILBERT F. WHITE, *HUMAN ADJUSTMENT TO FLOODS* 24 (1945).

⁷ 3 PRESIDENT'S WATER RESOURCES POLICY COMM'N, REPORT 383-429 (1950).

COINCIDENCE OF WATER POLICY DECISIONS WITH ANNUAL FLOOD DAMAGE,
IN DOLLARS, 1903-51



Graph from HOYT and LANGBEIN, *FLOODS* (1955)

The first great flood year of the century, 1903,⁸ brought no legislative response. Floods were still "acts of God." The second, 1909, coincided with Theodore Roosevelt's conservation crusade. In a regular Rivers and Harbors Act, Congress created its own National Waterways Commission⁹ and broadened the purposes for which rivers and harbors surveys were to be made.¹⁰ These preparatory steps toward

⁸ Floods are characterized in the following paragraphs according to the chronological treatment in WILLIAM G. HOYT and WALTER B. LANGBEIN, *FLOODS* 347-411 (1955).

⁹ 35 STAT. 818 (1909).

¹⁰ *Id.* at 822.

comprehensive policy were taken on executive initiative but with powerful leadership in Congress. A serious flood in 1913 stimulated the local flood-control program in the Miami Valley of Ohio, but it brought no national legislative response.

The year 1916 brought a major flood to the lower Mississippi, and San Diego was cut off for a month in California floods. The House of Representatives reacted at once by creating its Committee on Flood Control.¹¹ A few months later, Congress authorized the nation's first outright flood-control projects. Forty-five million dollars could be spent on the Mississippi and \$5,600,000 on the Sacramento. State and local contributions, in addition to levee and reservoir lands, however, had to match the federal contribution for the Sacramento and amount to half of it for the Mississippi. Future flood-control surveys were required to define the precise federal share as well as to comprehend other water uses. But flood control was also absorbed into existing rivers and harbors law.¹²

Simultaneously, the 1916 floods evoked quite a different response in Congress: inclusion in the Rivers and Harbors Act of the reform that Senator Newlands had been urging for ten years—the creation of a Waterways Commission¹³

... to bring into coordination and cooperation the engineering, scientific, and constructive services, bureaus, boards, and commissions . . . to formulate and report to Congress . . . a comprehensive plan or plans for the development of waterways and the water resources of the United States for the purposes of navigation and for every useful purpose. . . .

The Commission was charged, in addition, with defining the respective federal and state or local shares of proposed projects. But Senator Newlands' language was revised, before the Senate voted, to read:¹⁴

Nothing herein contained shall be construed to delay, prevent, or interfere with the completion of any survey, investigation, project, or work herein or heretofore [or hereafter] adopted or authorized

Only eight years after its initial victories, therefore, the congressional effort to plan comprehensive development had its first direct encounter with the impetuosity of crisis politics, and lost. The Waterways Commission was never appointed.

The next departure in flood-crisis policy was taken in the Flood Control Act of 1928.¹⁵ We have a full study of its background.¹⁶ The Mississippi River flood of 1927 destroyed \$300,000,000 worth of property and killed 313 people. Secretary of Commerce Hoover, who directed relief and rehabilitation, called it "the greatest disaster of peace times in our history."¹⁷ For the first time, the whole American people, listening to the radio and watching the newsreels, witnessed such a catastrophe in action.¹⁸ When it was over, Congress responded to the tide of national sympathy via the Flood Control Act of 1928. There was a vigorous debate upon the policy of

¹¹ 53 CONG. REC. 2338, 2406 (1916).

¹² 39 STAT. 948 (1917).

¹³ 40 STAT. 269 (1917).

¹⁴ SEC 3 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 7, at 404-05.

¹⁵ 45 STAT. 534, 33 U.S.C. §§702-702m (1952).

¹⁶ FRANK, *op. cit. supra* note 4, c. 9.

¹⁷ *Id.* at 192.

¹⁸ *Id.* at 179-80.

local contributions established in 1917;¹⁹ but how were the local levee districts along the Mississippi, already \$819,000,000 in debt,²⁰ to contribute to rebuilding their broken levees? Congress resolved the dilemma in language so thoroughly characteristic of crisis legislation that it is worth examining almost in full:²¹

That it is hereby declared to be the sense of Congress that the principle of local contribution toward the cost of flood control work, which has been incorporated in all previous national legislation on the subject, is sound, as recognizing the special interest of the local population in its own protection, and as a means of preventing inordinate requests for unjustified items of work having no material national interest. As a full compliance with this principle in view of the great expenditure estimated at approximately \$292,000,000, heretofore made by the local interests in alluvial valley of the Mississippi River . . . in view of the extent of national concern in the control of these floods, . . . and in view of the gigantic scale of the project, involving flood waters of a volume and flowing from a drainage area largely outside the states most affected, and far exceeding those of any river in the United States, no local contribution to the project herein adopted is required.

Policy to fit a sectional crisis becomes national, however, and in 1929, Congress refunded California's contributions of \$4,300,000 to the Sacramento project.²²

It is interesting to note that the engineering and cost-sharing proposals of the Chief of Engineers, General Jadwin, had reflected the position of President Coolidge in minimizing federal costs and allocating more of the burden to the area involved.²³ As it first tackled the flood problem, the Corps, like Congress, searched for the national interest. And Congress left to the President final decision between the Jadwin plan and a rival engineering proposal.²⁴ The Corps, at the top, was still an executive agency.

Extraordinary pressures for federal action were again brought to bear in the three years beginning with 1935. First came a flash flood on the Republican River in Nebraska and Kansas, drowning 110 people. Austin, too, was badly hurt by the Colorado River of Texas, and New York State had an unprecedented flood centering at Cortland. In the following spring, 1936, widespread March floods did \$200,000,000 worth of damages from Maine to Ohio. Then, in June 1936, Congress passed the nation's first "omnibus" flood control act.²⁵ It contained, in its initial policy statement, these remarkable words:

. . . the Federal Government should improve or participate in the improvement of navigable waters or their tributaries, including the watersheds thereof, for flood control purposes if the benefits to whomsoever they may accrue are in excess of the estimated cost, and if the lives and social security of people are otherwise adversely affected.

It authorized the Corps of Engineers to build \$310,000,000 worth of projects across the nation and conduct hundreds of additional surveys. Obviously, adjustments had

¹⁹ *Id.* at 239.

²⁰ *Id.* at 237.

²¹ Flood Control Act of 1928, 45 STAT. 535, 33 U.S.C. §702b (1952).

²² 45 STAT. 1381 (1929).

²³ See FRANK, *op. cit. supra* note 4, at 224-27.

²⁴ Flood Control Act of 1928, 45 STAT. 535.

²⁵ Flood Control Act of 1936, 49 STAT. 1570, 33 U.S.C. §701 (1952).

to be made to the programs of other departments. As to reclamation, the act merely disavowed interference; and the Department of Agriculture was given the permanent assignment of retarding waterflow and preventing soil erosion on watersheds. But no means of coordination was provided.

Once more, congressional controversy centered on a proposal that the federal government bear the whole construction cost. Senator Vandenberg warned:²⁶

The moment we have accepted that responsibility, we have accepted it for every navigable stream in 48 States of the Union; and the human imagination can hardly encompass the total extent of the burden.

The White House took the same side; once more, the Chief of Engineers supported the President; and their views prevailed. The act required local interests to pay for land and easements as well as damage caused by construction; the lower Mississippi was, of course, still exempted.

But on an equally basic issue, the Corps of Engineers followed a congressional committee rather than the President. When the bill passed the House as an "emergency measure" in 1935, President Roosevelt assigned the Budget Bureau and the newly-created National Resources Committee to a study of the proposed projects. To this, technical representatives of the Corps agreed, but the Chief of Engineers and Secretary of War did not. Such a review, they argued, would be a waste of time because "the appropriate committees of Congress . . . have already called on the [War] Department for a review of previous studies on streams suffering major losses during the recent severe floods." The Senate, thereupon, passed the omnibus bill without reference to the advice of the President; it had received the endorsement of the War Department.²⁷

The very next year brought floods to the Ohio and middle Mississippi Valleys "greater than any known since the time of settlement."²⁸ Millions of Americans hung on press and radio accounts of the evacuation of Louisville and the defense of Cairo, with inches to spare on its temporary floodwalls. It is not difficult to understand the viewpoint of Congress. The Flood Control Act passed only the year before had obviously provided no protection. A reason had to be ascribed, and the one closest to the surface was the delay in local contributions of reservoir lands.

The role played by the Mississippi Delta in 1928 fell to the Connecticut Valley in 1938; national policy was made to fit the needs of one stricken area; and the needs of Connecticut Valley, as William Leuchtenburg convincingly shows,²⁹ were exacting. Reservoir lands had to be taken in Vermont and New Hampshire for the primary benefit of Hartford and other Connecticut and Massachusetts cities. The states had agreed to provide the lands for the flood-control reservoirs authorized in the 1936 act via an interstate compact. The compact they negotiated reserved the

²⁶ See 2 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, TASK FORCE REPORT ON WATER RESOURCES AND POWER 736-37 (1955).

²⁷ See MAASS, *op. cit. supra* note 3, at 81-84.

²⁸ HOYT AND LANGBEIN, *op. cit. supra* note 8, at 384.

²⁹ See LEUCHTENBURG, *op. cit. supra* note 4, c. 4.

hydroelectric rights to the states. They did this with the tacit approval of the Corps of Engineers, whose role both in encouraging a compact which the President would disapprove as contrary to his power policy and in glossing over the need for reservoirs in valleys which the upstream states were unwilling to inundate, Leuchtenburg calls "inexcusable." In any event, this is a clear example of policy aimed at the immediate crisis colliding with policy to serve a firmly-held national purpose. The result: deadlock.³⁰

With no prospect of local contribution of reservoir lands in the Connecticut Valley, Congress, in 1938, suddenly discarded the requirement that had been reaffirmed only in 1936.³¹ Land for levees still had to be provided by the locality; but land for dams, reservoirs, and channel improvement was made a federal burden—and extended retroactively to cover the earlier projects. To the vastly enlarged problem of interagency coordination raised by the authorization of several large reservoirs, the law made only two minute contributions: Authorizations (but not appropriations) to the Department of Agriculture were geared to those of the Corps of Engineers; and the Federal Power Commission was given a part in recommending hydroelectric installations.³²

The Flood Control Act of 1944 was the final broad policy statement by Congress in this field.³³ It, too, was prompted by floods, not catastrophic this time, but coinciding with an impulse toward planning post-war public works. The floods were on the Missouri, a river linking irrigation territory to the Mississippi Valley. The act resolved the resulting conflict of uses by giving to irrigation and other consumptive uses of water, present and future, priority over navigation with respect to water arising in states west of the ninety-eighth meridian.³⁴ But since Missouri navigation was concurrently authorized, the general policy was, once more, inapplicable to the section out of whose problem it arose.

By this time, state-federal and interagency jurisdictional disputes had become a severe threat to the survival of existing programs. They were adjusted essentially by requiring each state and other federal department to review and comment on the completed plans of the Corps of Engineers, the Bureau of Reclamation, and the Department of Agriculture. This means, politically, that each agency may evoke local support for its proposed works in return for a chance to arouse opposition to those of other agencies. A clear premium is placed on the sort of unanimity engendered by crisis, and a hindrance placed in the way of mobilization of a general interest of people in an interstate region in the process of planning.

Let us turn briefly now to the national policy decisions which grew not out of crisis, but out of protracted struggle over perennial interests. Some, like the Weeks Act, authorizing national forests "for the protection of the watersheds of navigable

³⁰ *Id.* at 535-57, 65, 106.

³¹ Flood Control Act of 1938, 52 STAT. 1215, 33 U.S.C. §701C-1 (1952).

³² *Id.*, 52 STAT. 1225-26, 1216, 33 U.S.C. §§701b-1, 701j (1952).

³³ 58 STAT. 887, 33 U.S.C. §701 (1952).

³⁴ Flood Control Act of 1944, 58 STAT. 889, 33 U.S.C. §701-1(b) (1952).

streams,"³⁵ the Federal Power Act of 1920, defining federal powers and policy regarding hydroelectric sites and providing a commission to enforce them,³⁶ the Water Facilities Act of 1937,³⁷ authorizing the Department of Agriculture to build ponds and wells against drought, and the Water Pollution Control Act of 1948,³⁸ were directed toward well-defined objectives. They were the products of organized interest groups and national leadership devoted to those objectives. They had been worked out by factual investigation and trial and error over several years. They contributed to United States water resources policy, but not by authorizing or modifying any multiple-purpose reservoirs. Hence, they did not have squarely to face the challenge of crisis as an alternative basis of national consent.

Two laws in the entire period, however, did: the Boulder Canyon Project Act³⁹ and the Tennessee Valley Authority Act.⁴⁰ Note, behind the contrasting auspices, the similarity of legislative decisions. Both laws authorized flood control; neither was a political response to a flood. On the contrary, both stressed vendible products—electricity, plus irrigation water in the case of Hoover Dam—and clear arrangement was made for determining the cost of these products, selling them to preferred and other customers, and collecting the money. Hoover Dam could be more nearly a business proposition, since it was to meet existing demands;⁴¹ it had to rest on an interstate compact, since it disposed of scarce water claimed by competing states. The TVA was created to develop an area whose state governments were then passive as to resources development;⁴² it received numerous conservation and recommendatory powers. But both laws made a clear place for states and their subdivisions in distributing electricity; both had to confine the United States Government to significant contributions to stated purposes, since they were authorized outside the log-rolling process. Thus, both laws made policy decisions that have proved durable.

The Reclamation Act of 1902⁴³ and its amendments represent an intermediate case. The catastrophic drought of the decade of the 1890's aroused the public support necessary for its passage.⁴⁴ But drought, unlike flood, comes on gradually enough to permit much trial and error before legislation; and drought, moreover, is perennial in part of the West. The act operated in the western states and drew not on appropriations, but on proceeds from the sale of western lands; it rested on a regional public. Almost at once, however, the reclamation fund ran dry, and the Bureau of Reclamation had to seek wider support. Amendments to the original act in 1906 added hydro-

³⁵ 36 STAT. 961 (1911), 16 U.S.C. §515 (1952).

³⁶ 41 STAT. 1063, as amended, 49 STAT. 838 (1935), 16 U.S.C. §§791a-825f (1952).

³⁷ 50 STAT. 869, 16 U.S.C. §590f (1952).

³⁸ 62 STAT. 1155, as amended, 33 U.S.C. §§466-66j (Supp. III, 1956).

³⁹ 45 STAT. 1057 (1928), as amended, 43 U.S.C. §617n (1952).

⁴⁰ 48 STAT. 58 (1933), as amended, 16 U.S.C. §831 (1952).

⁴¹ A water shortage in the Imperial Valley, plus growing demands for both water and power in the Los Angeles area. See U.S. BUREAU OF RECLAMATION, DEP'T OF THE INTERIOR, *THE COLORADO RIVER* 55-67 (1946).

⁴² See Davidson, *Political Regionalism and Administrative Regionalism*, 207 ANNALS 138, 141 (1940).

⁴³ 32 STAT. 388 (codified in scattered sections of 43 U.S.C.).

⁴⁴ See GEORGE WHARTON JAMES, *RECLAIMING THE ARID WEST* xvi (1917).

electricity,⁴⁵ in 1939 flood control and navigation,⁴⁶ and in 1946 preservation of fish and wildlife⁴⁷ to the possible purposes of reclamation projects. In each case, the Secretary of the Interior was required to allocate costs to purposes so as to keep repayment responsibilities clear. But by 1944, the Bureau was in competition with the Corps of Engineers for flood-control money, and its projects authorized in the Flood Control Act of that year, both in the Missouri and Central Valley basins, have been most criticized from the standpoint of financial responsibility.

Consider, too, the strong efforts at policy-making which failed. Theodore Roosevelt's National Conservation Commission of 1908, Congress' National Waterways Commission of 1909-11, Senator Newlands' abortive Waterways Commission in 1917, Franklin Roosevelt's Committee on Water Flow and National Resources Board in 1934, his National Resources Committee in 1935, and George Norris' proposal for seven regional authorities in 1937⁴⁸—all were nation-wide in scope, policies of reorganization, or plans for study; none called for specific water-control works. Accordingly, put forward during or on the eve of serious floods, they could not compete for congressional support with lists of dams and levees in the stricken river valleys.

All the successful programs of water control, however, are not federal. The Miami Conservancy District in Ohio is a case of direct local reaction to a flood crisis—that of 1913—in an enduringly successful way. Aside from remarkable personal leadership, there were two assets here: The watershed of the Miami is also, to some extent, the social and economic watershed of Dayton, Ohio, which made it more meaningful than usual for Col. Edward A. Deeds to say to the citizens of the valley, "what is good for one is good for another."⁴⁹ Moreover, the five medium-sized dams could be built economically for the single purpose of flood control. Even so, the Miami Conservancy District is a monument to the keen sense of responsibility which pervades a project decided upon and paid for by the direct beneficiaries.

The point is confirmed by the contrasting experience of another Ohio valley—the Muskingum.⁵⁰ Also hurt by the 1913 flood, the people of the Muskingum lacked an urban focus of interest and leadership. The drought of 1930, however, created a second and steadier demand for reservoirs—for industrial and municipal water supply—and, after a second flood in 1933, the people finally mobilized themselves into a conservancy district. From the start, they had federal help that had been unavailable to the Miami Valley twenty years earlier—a public works grant to the Corps of Engineers to build the fourteen dams—but they undertook, as required by the Flood Control Acts of 1928 and 1936, to furnish the reservoir sites. After

⁴⁵ 34 STAT. 117 (1906), 43 U.S.C. §522 (1952).

⁴⁶ 53 STAT. 1194 (1939), 43 U.S.C. §485h (1952).

⁴⁷ 60 STAT. 1080 (1946), 16 U.S.C. §662 (1952).

⁴⁸ See 3 PRESIDENT'S WATER RESOURCES POLICY COMM'N, *op. cit. supra* note 7, at 395-96, 399-400, 403-05, 413-15; Leuchtenburg, *Roosevelt, Norris and the Seven Little TVA's*, 14 J. POLITICS 418 (1952).

⁴⁹ MORGAN, *op. cit. supra* note 5, at vi.

⁵⁰ See LUNA B. LEOPOLD AND THOMAS MADDOCK, JR., *THE FLOOD CONTROL CONTROVERSY* 143-44 (1954).

one local assessment had been made for the purpose, however, Congress, in 1938, retroactively nationalized this responsibility, providing for reimbursement to the Muskingum Conservancy District of the local money already spent.⁵¹

Equitably distributing local and general burdens for flood storage is difficult at best—Muskingum reservoirs, for instance, contribute also to flood control on the Ohio River—but it is out of the question in the wave of national sympathy following a major flood.⁵² An arrangement acceptable in one basin is wiped out by its impracticality in another, where the flood strikes. No policy of intergovernmental relations, accordingly, can develop in this atmosphere.⁵³

Introduce the perennial economic interest of hydroelectricity, however, and intrastate districts build and operate multiple-purpose projects under a variety of conditions. Here, one illustration must stand for the experience of the Nebraska power and irrigation districts, the Santee-Cooper project in South Carolina, and a number of Texas districts. The Lower Colorado River Authority controls the drainage of a part of Texas as large as the Tennessee Valley for flood control, hydroelectricity, water supply, and irrigation. Of the \$70,000,000 cost, \$26,000,000 came from PWA and Bureau of Reclamation appropriations, plus \$5,500,000 to be repaid. Yet, with Austin as an urban nucleus, people in this valley, unlike those in the Tennessee, initiated the project. Having their Congressmen Buchanan and Mansfield in the strategic positions of chairmen of the House Committees on Appropriations and Rivers and Harbors, respectively, they secured federal money outside the nation-wide flood control bill. It was appropriated on the eve, not the aftermath, of their disastrous flood of 1935; and their broad program for conservation and use of the water resources of the basin suggests that they now constitute as vigorous a basin public as the population of the Tennessee Valley.⁵⁴

Even so cursory a review of twentieth-century water resources development decisions as can be gleaned from existing case studies enables us to restate our hypothesis a bit more confidently in the form of generalized conclusions and questions for further exploration:

1. From the time they came onto the national agenda for government action in 1917, major floods have given rise to drastic departures in flood-control policy.
2. The policy shifts have been in the direction of facilitating response to crises. Since 1938, this facilitation has been complete enough so that the response to floods is now expressed directly in flood-control appropriations.
3. Crisis decision leaves no time for and makes no requirement of a measured interrelation of various water resources uses. Because assumption of responsibility for contributions, repayment, or enforcement of controls by states or local governments appears as an obstacle to swift remedial action, crisis decision undermines self-help by the population directly affected.

⁵¹ 52 STAT. 1217 (1938).

⁵² See WHITE, *op. cit. supra* note 6, at 22-23.

⁵³ See HOYT AND LANGBEIN, *op. cit. supra* note 8, at 232.

⁵⁴ See Clay, *supra* note 4.

4. As a result of the technique of multiple-purpose reservoirs and the concept of basin-wide planning, strong tension has arisen between authorizations and appropriations made on the basis of flood crises and other federal water resources programs, such as power, irrigation, and watershed protection.

5. This tension is resolved by drawing multiple-purpose programs into the orbit of crisis decision, except to the degree that (a) their purposes are of national importance, or (b) they are made the business of state or local governments or a participating basin constituency.

Before we can apply these conclusions to explain the frustration of reforms, we must, however, get a clearer view of the devices of crisis politics. Two questions, certainly, require further consideration:

1. Natural crises are always confined to particular areas. But flood-control legislation has, since 1936, been nation-wide in coverage. By what mechanism of opinion-formation, group and legislative politics, are the public of the flooded area and the national public linked?

2. Modern water-control plans are complicated judgments based on analyses of a variety of technical data gathered over long periods. How can they be made to fit crisis-generated consent?

To these questions, we now turn.

III

OPINION AND GROUP INTERESTS

The power question does not grip them emotionally. Power does not leave them wet and cold. Floods do.

Congressman Herman Koppleman, 1937⁵⁵

Most analyses of our water policies and our national administration of water resources programs conclude that we have not determined and protected the general national interest. But is the national interest more than a figure of speech? Rivers once occupied the forefront of the national scene as sources of energy, as arteries of national expansion and trade.⁵⁶ But the themes of the folk songs and folk novels of the last century have receded to the scholarly journals and books, and it now requires great imagination to appreciate that the need to control interstate waterways was a prime mover of the Constitutional Convention, or that a transcontinental river route was the geopolitical goal of our westward exploration.⁵⁷

America's river-minded epoch, in short, is over. A search through all the public opinion polls abstracted in the *Public Opinion Quarterly* for five years 1947-51 discloses no expression of opinion on water problems as such. Nor did reference to these problems appear in any of the published responses to such nation-wide queries as, "In the Congressional elections which will be held this year, what do you think

⁵⁵ LEUCHTENBURG, *op. cit. supra* note 4, at 116.

⁵⁶ Note the prominence of the river improvement conventions 1845-75. See FRANK, *op. cit. supra* note 4, at 167.

⁵⁷ See BERNARD DeVOTO, *THE COURSE OF EMPIRE* (1952).

will be the main problem which will be discussed."⁵⁸ Only regional polls taken in the West Central, Rocky Mountain, and Pacific Coast states disclosed an interest in weather, conservation, and irrigation as "important problems facing this section of the country."⁵⁹ Americans generally were rather concerned with personal or family problems (makings ends meet, health, etc.) and, to a lesser extent, with the threat of war. Water resources matters could claim only tiny fractions of the attention of the tiny fraction (eight per cent in one highly competent recent survey) of the population who expressed any worry over any national or local issue whatever.⁶⁰ There need be no great mystery, then, about the dominance of special and individual interests—congressmen, lobbies, particular agencies—over against the more general interests that speak through the parties, Congress as a whole, or presidents. With respect to water resources, general interests are asleep, to be awakened only by floods and droughts, by catastrophe.

This tendency of a public to comprehend a program of government in terms of "putting out fires" rather than preventing them is familiar as well in international relations as in the budget of a city safety program. The two distinctive characteristics of water crises, however, are first, they tend toward greater damages; and second, even as crises go, they are extremely episodic. Flood damages in 1928-51 were twice as costly, allowing for change in the value of the dollar, as in 1903-27. Increased damage was apparently attributable, in almost equal measure, to greater physical volume and frequency of overflows and to the building-up of floodplain property.⁶¹ Over the period when our national water policies have solidified, then, floods have, in the popular sense, been getting worse. It is also true that floods are among the most wildly uneven of internal crises. Nation-wide fire losses averaged over twenty-five years 1927-51 were 2.7 times greater than flood losses. But while fire losses in any one year ranged only from \$235,000,000-\$730,000,000, flood losses fluctuated from a low of \$3,000,000 in 1931 to a high of \$1,029,000,000 in 1951.⁶² That is, of course, a major reason why flood insurance has waited for government sponsorship. It is also the reason, coupled with the large areas devastated simultaneously by our worst floods, why the Red Cross spends sixty per cent of its disaster relief money on floods.⁶³

Just why a great flood or drought so captures the attention of a nation informed by mass media is a subject on which we need investigation. Purely technical factors must play a considerable part—unlike a fire or tornado, the main river flood gives the reporters and the cameramen time to get there; it is awesomely visible to the aerial photographer. There must be more substantial reasons, too, such as the dramatic test posed by floods and droughts (along with hurricanes and earthquakes) of the morale and leadership of whole communities.

⁵⁸ See American Institute of Public Opinion releases of Nov. 25, 1949, March 19, 1950, and June 28, 1950.

⁵⁹ See 13 PUB. OPINION Q. 355, 727 (1949).

⁶⁰ See SAMUEL A. STOUFFER, COMMUNISM, CONFORMITY, AND CIVIL LIBERTIES, A CROSS-SECTION OF THE NATION SPEAKS ITS MIND 58-72 (1955).

⁶¹ See HOYT AND LANGBEIN, *op. cit. supra* note 8, at 85-90.

⁶² *Id.* at 107.

⁶³ *Id.* at 131.

If national opinion is fascinated with water problems for several days or weeks scattered over each decade and oblivious to them the rest of the time, however, opinion in certain sections of the country is quite otherwise. Let us consider first the chronically vulnerable areas, the alluvial valley of the Mississippi or the arid and semiarid portions of the West. To both might apply the inscription at the base of Colorado's capitol dome "Here is a land where life is written in water." And the controls, whether levees or ditches, by which water is made secure for human life are too obvious to be neglected. If we dig back into the early manifestations of interest in water control in these areas, we find vigorous efforts at self-help. Preceding the ditch companies and irrigation cooperatives in the West were the levee districts along the Mississippi, beginning in 1717, and other flood-vulnerable rivers.⁶⁴ These institutions were chartered, if at all, by state law, self-supported by sales of water or taxes on the benefited land, and largely subject to vigorous local self-government. But with tragic consistency, these self-help works were overwhelmed by unforeseen extremes of water flow: catastrophic droughts dried the ditches, and catastrophic floods topped the levees. Then, the people from these areas, where water was life or death, turned to Washington.

Washington was mainly apathetic. But in the vulnerable areas, people were locally organized, they were accustomed to raising common funds and employing managers, they were fighting to preserve an essential security in terms of water which they felt they had earned by previous exertions. So, they set about deliberately to lobby, year in, year out, for the national protection they knew the nation would gladly extend in the season of catastrophe. "People showed much enthusiasm during and immediately after floods but they soon forgot. This phase of the problem the Mississippi Levee Association proposed to meet. . . ."⁶⁵ Incorporated after the 1912 flood, the Association and its tireless secretary, John A. Fox, had, by the time of the next major Mississippi flood in 1916, done its propaganda work so well that Congress, in 1917, put the United States into the levee business.

Without that history thus epitomized, without a concept of the interplay between an episodic national interest and a perennial interest in the areas of special vulnerability, one cannot begin to understand the national power, but sectional orientation, of "the lobby that can't be licked." The organized water interests in the deltaic valley of the Mississippi and, to a lesser extent, in the arid West had "sacred cow" status; in one form or another, they were as old as white settlement. To the nation, they said, in effect, "We did all we could to protect ourselves; our efforts were destroyed by acts of God. The nation must take up the burden for the sake of its own threatened investments (or the winning of the West)." No doubt, as the names indicate, the National Rivers and Harbors Congress, proposed in 1901 by a New Orleans businessman,⁶⁶ and the National Reclamation Association, proposed in 1932

⁶⁴ See FRANK, *op. cit.* *supra* note 4, at 15 *et seq.*

⁶⁵ *Id.* at 169.

⁶⁶ See NATIONAL RIVERS AND HARBORS CONGRESS, REPORT OF THE PROCEEDINGS (1901).

by the Commissioner of Reclamation,⁶⁷ were intended as genuinely national associations. But some degree of sectional bias was almost inevitable where some sections of the country had long been intensely interested and others were only recently or fleetingly so.

If we now broaden our view to take in all the subnational interests which have made themselves felt in water resources programs, we see a disconcerting variety. To go no farther, let us consider the varied bases of support of the Miami Conservancy District, the Salt Creek-Wahoo Watershed Association, the Lower Colorado River Authority, the TVA, and the Pick-Sloan plan for the Missouri. As our earlier hypotheses suggest, a number of factors influence the difficulty of mobilizing a basin-wide constituency. In an intrastate basin, such as some of the small watersheds, the Miami, or the Colorado of Texas, such a river-oriented constituency may generate itself, depending partly on the social cohesion of the drainage-area populace or the importance of water resources to them. In the difficult case of the interstate basin, however, a potent drainage may be employed by statesmanlike administration to arouse a sense of participation in so many common enterprises (navigation terminals, soil-erosion control, power distribution, waterfront planning, reservoir parks, improved labor relations, adult education, forestation, and industrial development) as to develop a lasting identification with the basin development on the part of virtually all politically active residents. This is evidently what has happened in the Tennessee Valley.⁶⁸ In a different interstate situation, where the prospects of social cohesion are still lower but the state governments are highly alert to their competing claims for scarce water, a firm agreement may be reached among governments without evoking appreciable loyalty of basin people to the program as a whole. This was the circumstance of Hoover Dam.

At some point, a characteristic decision faces all complex water resources developments. The actual assumption of responsibility by local people is slow, irregular, spotty.⁶⁹ At least one needed individual, group, city or state will hold out. Pressure mounts on the federal agency to assume the local burden so that its work can move ahead. To the extent that it does, local groups and local governments turn their attention to Washington. To the extent that federal policy-makers resist the pressure,

⁶⁷ See *Hearings before a Subcommittee of the House Committee on Public Lands on Irrigation and Reclamation*, 80th Cong., 1st Sess. 85-86 (1947).

⁶⁸ Although there has been no adequate study of this point, the TVA's claims have been confirmed by the opinions of scholarly observers. See Ray, *The Influence of the Tennessee Valley Authority on Government in the South*, 43 AM. POL. SCI. REV. 932 (1949); McKINLEY, *op. cit. supra* note 4, at 536. Professor McKinley shrewdly observes that the usual charges that the valley authority represents "an outside dictatorship" are countered by the criticism in the most exhaustive study of the question, PHILIP SELZNICK, *T.V.A. AND THE GRASS ROOTS* (1949), that the TVA has yielded too much to the extension service-Farm Bureau influence in the valley. McKinley, *The Valley Authority and Its Alternatives*, 44 AM. POL. SCI. REV. 619 (1950).

⁶⁹ Leopold and Maddock made this diagnosis of the new watershed protection program of the Department of Agriculture in 1954. LEOPOLD AND MADDOCK, *op. cit. supra* note 50, at 161-64, 213-14. In 1956, congressional review of the program corroborated their conclusion. *Hearings before the Subcommittee on Conservation and Credit of the House Committee on Agriculture, on Amendments to the Watershed Protection and Flood Prevention Act*, 84th Cong., 2d Sess. (1956).

however, demands for action focus on governments within the basin. This is the necessary, although not the sufficient, prerequisite of a basin constituency.

IV

LOG-ROLLING AND CRISIS LEGISLATION

Compromise is the legislative way of life. It is the sacrifice of a lesser for a greater interest in order to gain a majority. Log-rolling, on the other hand, is the acceptance of matters of no interest to gain a majority for one's sole desire. In recent years, Congress has authorized the investment of federal funds in airports, housing and slum clearance, schools, hospitals, and even the military installations of the Corps of Engineers through the interplay of local and group interests. But these authorizations are always tested by important national concerns, and the compromises are, in this sense, creative. Why, then, does the sterile arithmetic of log-rolling survive for water authorizations alone?

It is true that log-rolling in this field has a history going back at least to 1826. Albert Bushnell Hart left us a "Biography of a River and Harbor Bill"⁷⁰ as of 1888, which needs only the revision of the titles of congressional committees and the addition of two zeros to the dollar amounts to portray log-rolling in 1957. But there were influential men in Congress, 1900-17, who demanded a better approach. Representative Theodore Burton, who warned the initial meeting of the National Rivers and Harbors Congress against unproductive and scattered appropriations,⁷¹ and who chaired the National Waterways Commission Congress set up in 1909, was one. Senator Newlands was another, and he won congressional chartering (only on paper, as it turned out) of an even more comprehensive Waterways Commission in 1917. Senator Norris, in the 1920's, exerted his leadership on Muscle Shoals, outside the sphere of water politics, in the Agriculture Committee. Since 1936, however, there have been lonely attacks on log-rolling, but no constructive leadership seeking the national interest in water policy. Log-rolling, unhappily, is more than a survival; it no longer encounters serious contest.

The significance of the omnibus bill for the Congress must be viewed with reference to the localism of individual members, the lack of general leadership, and the ephemeral crisis interest of Congress as a whole. Floods often come in the spring months, just when flood-control bills are under consideration. Each specific project has supposedly been reviewed in the projects committee of that anomalous organization, the Rivers and Harbors Congress. It comes then to the Public Works Committees of the House and Senate. No doubt, here, the long-standing concerns of men from the Mississippi Delta—the late Judge Whittington and Senator John Overton were instances—who have won disproportionate leadership during Democratic majorities by the seniority rule, receive undue consideration. Sometimes, committee leaders have occupied themselves with statements of general policy in flood-control

⁷⁰ AM. HIST. ASS'N PAPERS 180 (1888).

⁷¹ NATIONAL RIVERS AND HARBORS CONGRESS, *op. cit. supra* note 66, at 74-77.

acts, but nothing is farther from their calculations than abandoning the omnibus format.

One further procedure opens congressional decisions in these matters to log-rolling: the great excess of authorizations over actual starts. This means that Congress need not take too seriously the authorization or approval of a project. The Chief of Engineers has classified \$1,200,000,000 worth of authorizations as "clearly inactive."⁷² At the present rate of spending, twenty-two years of future work stands authorized.⁷³ From this long list, it is much easier to select for appropriation projects which fit the requirements of log-rolling, especially in a flood crisis; for there almost invariably are approved projects for dams and local protection works in the afflicted area, awaiting only money.

Confined to "rivers and harbors" bills, log-rolling was visibly "pork" and, hence, vulnerable. In flood crises, however, log-rolling meets the need of the moment for large-scale action. In both cases, the leadership in the legislative process tends to come from the areas of most intense interest, so that there is a sectional bias beneath nationwide lists of projects and assertions of general policy.

The alternative to this procedure most often proposed has been project authorization by the President or a department head.⁷⁴ Certainly, this is the desirable form of decision upon the lesser, simpler schemes. But to state in general statutory language guides to executive decision upon complex developments of major basins is unrealistic. The critical needs for water, the potential in the drainages, the fit between basin and state boundaries, the history of federal activity, the burden on the nation's taxpayers are all too varied from basin to basin to permit regulation in the abstract. In any event, consideration of the problem of a major basin at the stage when it merits comprehensive development under federal sponsorship can elicit more truly national attention than verbal statements of policy. What is needed as an alternative to the omnibus bill, then, as is so often needed in constitutional government, is a differentiation of the major and the minor decisions.

V

CRISIS AGENCY

To try to solve our stubborn problems of water use by administrative reorganization is, we can now see, superficial and, therefore, unlikely to succeed. For what has to be redirected essentially is the form in which public attention is focused. But that root problem is itself strongly conditioned by the present administrative organization.

Congress looks for engineering advice on all water problems to the Corps of Engineers. This is a body of 50,000 civilians and 10,000 Army officers (including 8,000 reserve officers), of whom 250 officers and 20,000 civilian employees are en-

⁷² See 2 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit.* *supra* note 26, at 984.

⁷³ *Id.* at 39.

⁷⁴ See Maass, *Congress and Water Resources*, 44 AM. POL. SCI. REV. 576, 592 (1950).

gaged on "civil functions," or water use programs; the remainder on building air bases, training Engineer troops, and other military duties. Even of the 250 officers engaged on civil public works, all but thirty-one had, in 1954, some concurrent military duties.⁷⁵

Let us consider the viewpoint of a typical officer of the Corps of Engineers who is crucial as a proponent of water plans—a district or division engineer. He has the rank of colonel. Of his sixteen years of service, four or five have been spent on civil works. He has been assigned to his district (*e.g.*, Vicksburg, Savannah, or Fort Peck) or division (*e.g.*, lower Mississippi Valley, South Atlantic, or Missouri River) for three years. His tour of duty may, in fact, be ended in two, since rotation is considered essential to training for military administration. His command consists of only a handful of other officers, plus an average of 220 civilians in the case of a division, 850 in the case of a district, where design is done and contractors supervised. The civilians—that is, the quarter of them who are professionals or subprofessionals—tend to have longer experience on the drainage in question than the officers and collectively a wider variety of professional backgrounds in specialized fields of engineering and in such ancillary fields as hydrology and transportation economics. It is the district or division engineer, however, who stands as the sole representative of the Corps and the advocate of its plans before the public, whether at meeting in the area or before congressional committees.

In his *Muddy Waters*, Professor Maass has documented the "shirking of responsibility" by the Corps of Engineers for decisions which might arouse local or congressional controversy.⁷⁶ But from the viewpoint of a district or division engineer, it is difficult to see any alternative. "Keeping clear of politics" is a canon of professional ethics for the career Army officer. To draw the fire of a group of congressmen, or even of the influential interests of a city or state, would represent a considerable failure in this regard. But who is to decide the stubborn matters of political controversy involved in a major water resources development? The more incongruous civil functions in a military department have grown, the less have Secretaries of War, or later of Army and Defense, been inclined to pay the price of congressional warfare to take control of them. Nor has the Chief of Engineers, himself a career Army officer, been more inclined toward political controversy than his subordinate.⁷⁷ So, demands of Congressmen and resistance of cities and farmer groups have all descended upon the district engineer.

"On top, not on tap," what is the expert to do? The Corps of Engineers' solution seems inevitable. They wait for "local interests" to agree among themselves, mean-

⁷⁵ See Sturm, *Civil Functions of the Corps of Engineers: Relation to Military Mission*, in 3 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 26, at 1473, 1517-20.

⁷⁶ MAASS, *op. cit. supra* note 3, c. 2, especially p. 57.

⁷⁷ The situation is at the opposite extreme to that described by Gordon Clapp as characterizing the TVA. Its Board of Directors takes all congressional pressures, including those of individual congressmen, and insists that its staff make purely technical and managerial proposals. GORDON R. CLAPP, *THE TVA, AN APPROACH TO THE DEVELOPMENT OF A REGION* 39-43 (1955).

while making no recommendation which would encounter opposition strong enough to stir Congress. Concerted opposition was and is unlikely as regards channel-deepening or local levees and floodwalls. Modern flood-control engineering, however, poses more difficult political problems. The resistance to great storage reservoirs on the part of the people dislocated does not reconcile itself with the advocacy of the benefited city-dwellers below. So, the Corps has several times "officiated at the dismemberment of its own plan for flood protection"⁷⁸—for instance, by building floodways while the reservoirs on which their safety depended were balked by political opposition. So, the Corps has welcomed assumption by other agencies of all responsibility for uses of its own dams which involve the potential conflicts inherent in collection of money from users—thus, readily agreeing, for example, that the Department of Interior should market its power and, usually, distribute its irrigation water.

While the Corps of Engineers has, thus, been accused of localism and the neglect of multiple purposes, it has also come under attack from the opposite direction for favoring big storage projects at the expense of local adjustments of the floodplain.⁷⁹ Politically, this is all of a piece, for the widening of clear floodways through cities, the recognition that there may occur superfloods which are uneconomic to control, the local assumption of the cost of strictly local protection, the inclusion of floodplain zoning in plans—all are solutions which would arouse local resistance and thus give the district officer the appearance of a political contestant.

Now we are in a position to understand how the Corps of Engineers comes under repeated criticism by authoritative study commissions, while enjoying an increasing public esteem. For, the outcome of the shirking of responsibility to get unpopular storage built and to keep unsafe floodplains clear of buildings is the dramatic increase of flood damage which we have observed. Yet, the very catastrophe which warns the study commission of the weakness of our flood-control program creates for the Corps of Engineers officer the climate of political unanimity he needs to advance bold proposals. Remember that he can count on, at most, two or three more years of responsibility for the particular drainage. What he can accomplish in that brief span is what the victims of the current flood insist on: authorization of a plan of works designed to protect them against a recurrence of that particular flood. Whether the plan is too grandiose to be completed, whether some of its key reservoirs will be blocked by those who would be dislocated, and whether the project has a claim to priority in the nation's limited investment (to say nothing of the broader questions of most economical multiple uses) are not his crucial concerns. He is conscientious enough to worry about them, but isolated as he is from the executive hierarchy, he ascribes responsibility for them to a body which, considered as a whole, has an even shorter time perspective than his, the United States Congress.

⁷⁸ LEUCHTENBURG, *op. cit. supra* note 4, at 107. See also MAAS, *op. cit. supra* note 3, at 53-56; HART, *op. cit. supra* note 4, at 150-52.

⁷⁹ See HORNER, *Report of the Task Group on Flood Control*, in 2 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 26, at 718, 811-15.

What if catastrophic floods recur *after* a key plan of the Corps of Engineers has been authorized and supported by appropriations as generously as Congress is ever apt to do? One cannot understand the invulnerability of the Corps's position without appreciating its flood-rescue role. Consider the incident which certainly posed the ultimate test: the Missouri basin floods of 1951 and 1952.⁸⁰ They occurred at the height of press interest in and citizen support for the forthright recommendations of the first Hoover Commission to transfer the Corps's civil functions to the Interior Department. They occurred five and six years after the Corps had been at work on its "comprehensive plan" for flood control. The Kansas City flood—up to then, the nation's most damaging—revealed not only that the district engineer's previous plans had calculated on too little water, but that he had permitted them to be dismembered by building floodwalls in Kansas City without the upstream reservoirs he knew were needed to render them safe. When catastrophic floods struck the Missouri above Kansas City the very next spring, President Truman flew to Omaha for inspection. Newspaper reports (hopefully leaked, no doubt) had it that he was about to send Congress a reorganization plan finally carrying out the Hoover Commission proposals to transfer river work from the Army. In Omaha, however, the President met the Chief of Engineers, General Lewis A. Pick, who was directing the truly heroic work of raising the Engineers' levees. The whole floodplain went under, but Omaha and Council Bluffs were, after three days of suspense, saved by inches. Nothing more was heard of any plan to take river work away from the agency that won that fight.

The Corps of Engineers has become a crisis agency. In congressional terms, fifty-six per cent of its new work receives appropriations under the heading of "flood control"; "rivers and harbors" are in second place.⁸¹ Isolated from the executive hierarchy by the very incongruity of its function in a defense department, it depends for decisions and support on Congress—on Congress not, however, as it may be challenged to define broad policy, but rather in its local and ephemeral manifestations. Likewise, it depends on the consent of "local interests"—not, however, as they might be challenged to identify their community of interests in cities and states, but rather upon the immediate common denominator of consensus. That is provided in both cases by crisis.⁸² Flood fighters in their rescue mission, Corps of Engineers officers are drawn by the source of their political support, as by their isolation from the broad continuing aims of civil administration, to become flood fighters in their planning, too.

⁸⁰ The author published an account of this episode in the Milwaukee Journal, April 27, 1952, §5, pp. 1, 3.

⁸¹ See 3 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit.* *supra* note 26, at 1544-45.

⁸² It is the crisis of a serious flood which reveals the political impotence of the interagency committees. They are ignored. See MCKINLEY, *op. cit. supra* note 4, at 630.

VI

FRUSTRATED REFORMS AND THE FUTURE

Viewed in the perspective of the rising power of the chief executive in the American constitutional order, the history we have reviewed presents an anomaly. In the essential decisions regarding federal development of our water resources, the most important sector, flood control, has developed virtually outside executive control. This would be strange enough were it not interlocked in multiple-purpose reservoirs with other federal programs; and we have found those other programs drawn away from executive direction and into the vortex of crisis politics as often as we have found the contrary.

All the while this hiving-off has proceeded, authorities in public administration have been calling for integrated departmentalization of the executive branch in the field of water resources. If we examine the whole record of reform proposals, however, we are brought up short by the fact that fifty years have produced only compromises of the original idea. Theodore Roosevelt put it most forthrightly and with the maximum popular appeal and political effectiveness in 1908. Herbert Hoover formally proposed merger of the Corps of Engineers in the Interior Department in 1932.⁸³ No subsequent president has gone that far. The first Hoover Commission recommended transfer of the Corps's civil functions; but the second Hoover Commission dropped it, calling, instead, for a Water Resources Board in the Executive Office and a strengthening of the Budget Bureau to evaluate water resources development projects.⁸⁴

Our analysis shows how seriously both of these latter are needed, for the crucial weakness of the executive in dealing with water plans advanced in crisis has been that he had no specific program to propose at the moment of political demand. This was known full well twenty years ago by both Franklin Roosevelt as president and the alliance of congressmen, Corps of Engineers, and the rivers and harbors lobby which dominates water resources authorizations. The President was more interested in the problem and better informed than other presidents are apt to be; moreover, his Dutch was up. But he was defeated in 1943 on precisely the two recommendations which the second Hoover Commission brought forward in 1955.⁸⁵

It is only from the narrow viewpoint of the specific reorganization proposal to integrate federal water agencies, however, that our record of fifty years of federal decisions warrants pessimism. Bold proposals have been made and even enacted into law; but they have never been proposals for mere reorganization. Invariably, they have been ways of capturing from our water resources some new contribution to a currently powerful demand of the American people. Reclamation was the answer to the frustration of our westward march; the various waterways commis-

⁸³ Proposed Reorganization Plan of Dec. 9, 1932, 76 CONG. REC. 234, 237 (1932).

⁸⁴ See U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, REORGANIZATION OF THE DEPARTMENT OF THE INTERIOR I (1949); 1 *id.*, *op. cit. supra* note 26, at 67.

⁸⁵ See MAASS, *op. cit. supra* note 3, at 105-08, 109.

sions to the transportation bottleneck and the high-handedness of the railways; and Theodore Roosevelt's power policy and the Federal Power Act to the need for abundant and cheap electricity across the continent. What we are apt to miss in our preoccupation with the mechanics of government is that Franklin Roosevelt's water policies, in so far as they were successful, were, to a minor extent, measures directed against drought in the Great Plains and, to a major extent, measures to pull important and generally underdeveloped sections of the nation out of the Great Depression. That is as true of the TVA and of the state authorities launched with PWA funds as of Bonneville and Grand Coulee and Fort Peck Dams.

In a sense, then, the answer to crisis politics has, in fact, been politics alerted to the larger crises—the generally and intensely-felt needs of the nation. But the record of the past permits us to look a bit more directly at the future. It was World War I that intervened, just when Senator Newlands had won his Waterways Commission, to divert the attention of the nation and the President and leave the infant flood-control program to log-rolling. It was World War II that intervened at the climax of President Roosevelt's battle for executive direction of water resources planning; while the nation was preoccupied with other campaigns, he lost not only his executive staff for coordination, but, in the Flood Control Act of 1944, leadership of the crucial adjustment of reclamation with rivers and harbors work. It is time for those who are interested in improving national water resources programs to ask candidly whether the next decade or two is not apt to present crises more like those of the war periods than those of the westward expansion, the development of our public utilities, or the Great Depression.

If one assumes that the political questions of first importance for the national public will be, as opinion polls indicate they are now, questions of war and peace, some national interest in water resources may, nonetheless, be emerging on a second level of importance. One cluster concerns water in agriculture. Certainly, reclamation must give way to irrigation as a technique of cultivation and, thus, win nationwide importance. Certainly, we are accepting control of the loss of topsoil as an aspect of flood control worth national support. Sooner or later, we must also deal with the moisture situation on the Great Plains.

Another cluster of growing water problems is essentially urban and industrial: Water supply will soon limit our industrial development, as it already limits industrial location. More cities will run short of water. Pollution is a growing national problem. We have stumbled almost blindly into a policy of national flood insurance. Floods will continue to inflict greater damage to our cities; and we shall have to decide sooner or later whether we wish to control the damages or merely invest billions in a doomed effort to restrict rivers to a smaller and smaller part of their floodplains. Flood insurance, if we mean it, will force that decision very rapidly.

However uncomfortable it is for a generation stirred by "one river, one problem," we are face to face with the fact that each growing meaning of our water resources is in terms of a purpose going far beyond water control. We must think of naviga-

tion as transport, of hydroelectricity in a system of fuel (including atomic fuel)-generated power, or flood control as city planning, of irrigation and watershed treatment as agriculture, and so on. This development is not new or strange as our economy grows in complexity. It would not be surprising had we not needed to generate so much fervor first for conservation and then for unified water resources development in promotion of sorely needed reforms, as to forget that these are not purposes, but techniques to be employed to meet one or more needs of our population.

How these needs might be interrelated and dramatized so that they might attain national prominence is beyond the scope of this article, although my own grouping inclines toward water for agriculture and water for urban growth. But the first conclusion of this article can stand, regardless of the particular overriding needs toward which we may point our water resources programs. It is that unless we aim our policy and organization at some need which is of known importance to the American people, we shall continue to be frustrated. That is true not only because the vested agencies, committees, and interest groups are too strong to be dislodged for the sake of administrative neatness, although that is true enough. It is true because the most likely outcome of a crusade for unified organization of national water resources programs, in the absence of any popular purpose, is their unification in the crisis agency which has the eye of the nation on the only occasions when the nation is now genuinely concerned with water. The first Hoover Commission failed to take civil functions from the Army in 1949; the second Hoover Commission proposed giving the construction of Soil Conservation Service headwater dams to the Army in 1955.⁸⁶

None of this argument is directed against the need for single control of the water of a drainage basin or single direction of the complex process of survey, design, and advocacy by which such single control can be made to produce the fullest human values. Our analysis has been premised on this need. But we are driven by that analysis to question whether unification of either variety can be effected, short of executive fiat, in the interest of administrative efficiency *per se*. Presidents themselves, however concerned with the span of control, have responded rather to the potential political demands to which they might give leadership. These have called not for administrative simplicity, but for visibly new (and, hence, usually separate) services—forestation, irrigation, and public power. Or they have called for the dramatic regeneration of a portion of the nation—the valley authority fit the demand. There is no assurance—in fact, little likelihood—that these will be the potential national demands of the future; and we must be alert for the new ones by which alone successful organizational change can be energized. But there is even less likelihood that the American people, awakening to their responsibilities for world leader-

⁸⁶ 1 U.S. COMM'N ON ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT, *op. cit. supra* note 26, at 190 *et seq.*

ship, will accept as a problem for decision the executive organization or procedure for deciding on water resources developments.

Increased participation in water resources development by states and their subdivisions is the second recommendation upon which authoritative commissions agree.⁸⁷ This recommendation is the only basically new one since Theodore Roosevelt. Two strong new arguments can be made for it: First, is the point stressed above, that policy-making for the nation as a whole is preoccupied with larger issues and that water resources development plans tend to get considered without benefit of general public scrutiny if they are decided in Washington in any detail. Second, is that states and cities have now demonstrated new proficiency in making water policy and administering water resources.⁸⁸ The best of them have certainly surpassed the United States in clarifying their water law and possibly in organizing their administration of water resources programs.

Increased state and local participation, moreover, is being put into practice. But there's the rub. "Partnership," in actuality, has meant the withdrawal of the United States Government from hydroelectric development, however large-scale, while it remains in the business of building levees and floodwalls, straightening channels, and deepening harbors, however minute. There could be no more telling, because inadvertent, demonstration that in the absence of national political purpose, the controversial aspects of water resources policy are neglected, that those supported by the fleeting and aimless unanimity born of crisis supervene.

But assuming an attempt to free the national government from all sorts of water resources responsibilities which clearly benefit states or localities and fall within their capabilities, it is clear that progress cannot be made by treating the whole country uniformly. That is true for two reasons: Strategically, ending federal work on local flood-control and rivers and harbors projects withdraws patronage from almost every member of Congress and threatens the power of a solid sectional coalition for the benefit of a constitutional principle and lower federal taxes. It would seem, on the record we examined, to be an unequal struggle, although this is the sort of estimate on which political science is almost useless.

The more solid reason why state and local responsibility for water resources development cannot be expected uniformly, however, is that each basin presents a unique situation. Not only are state capacities varied (this is true also in highway and education administration), but by its geographic reach and economic potential, each basin has its own degree of amenability to state development. How much the states can do, and through what instrumentality, is a product of all the variables in our hypotheses—and doubtless others, too. The philosophy that we can, on the basis of successful experience in one basin, "march on" to apply the policy or organization to the others is as arbitrary and sterile when applied to interstate compacts or federal departmental administration as it is when applied to valley authorities.

⁸⁷ Including COMM'N ON INTERGOVERNMENTAL RELATIONS, REPORT TO THE PRESIDENT 239-45 (1955).

⁸⁸ See Lepawsky, *Water Resources and American Federalism*, 44 AM. POL. SCI. REV. 639 (1950).

VII

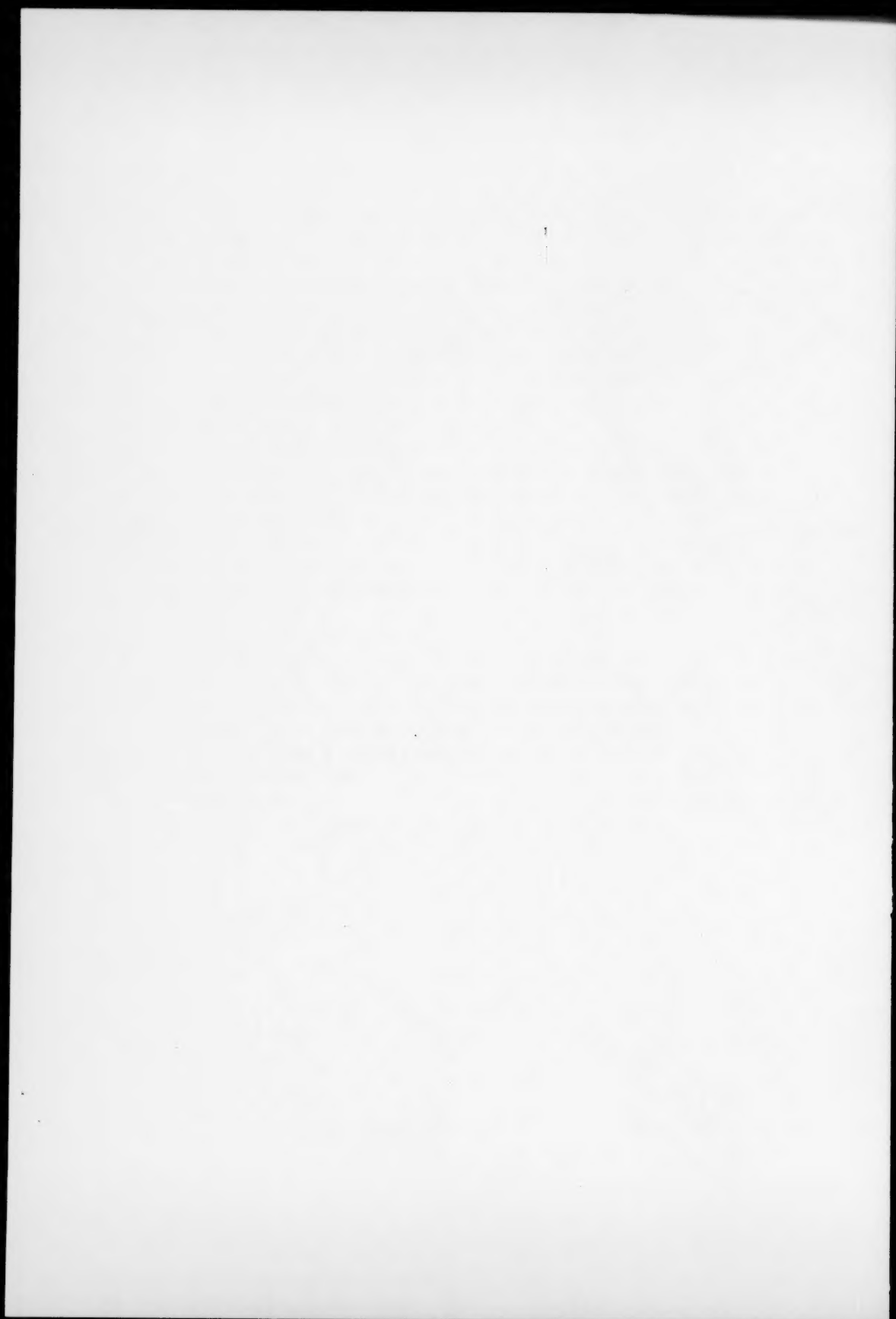
CONCLUSION

We have failed to find viable answers to the problems of governing our water resources, because we have been looking in the wrong places. We have looked to national departmentalization and executive organization, while the problem is basically one of public attention and interest. We have looked for assertions of policy, but the problem is one of discovering people's conscious needs. We have conceived of techniques as decisive and of the natural flow of water as embodying some human imperative, when its true human meaning is variety and diversity of potential. The water potentials which enlist human enterprise and decision over the years do not coincide, save by remote chance or by the most painstaking institutional arrangements, with states, cities, or the nation. The water potentials which move states, cities, and the nation immediately to act are fleeting and capricious and incapable of being harnessed economically, save by measures which assume long-term human enterprise. One alternative before us, therefore, is to continue to try to rationalize our national government and to make uniform devolutions to the states—although consent born of crisis will continue to thwart and misdirect those efforts. Or we can try to define and call into being communities of interest, finding a substantial and contributing part in water resources programs for the populations of the nation, the state, the basin, and the locality.

That alternative is not the same as that for which Mr. Lilienthal cited the authority of Tocqueville.⁸⁹ For to Tocqueville, the choice lay between autocratic central administration and local administration.⁹⁰ It is only through high-quality and flexible national administration that, in the case of great interstate basins (as in the case of other complex national programs), an important sphere for local administration is found. But neither is our alternative that of political scientists who take for granted an existing national interest in improved water resources administration. We have fresh thinking to do.

⁸⁹ DAVID E. LILIENTHAL, *TVA: DEMOCRACY ON THE MARCH* 163-64 (Pocket Books ed. 1945).

⁹⁰ 1 ALEXIS DE TOCQUEVILLE, *DEMOCRACY IN AMERICA* 86-97 (Phillips Bradley ed. 1945).



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